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...ith which is combined Operation & Maintenance

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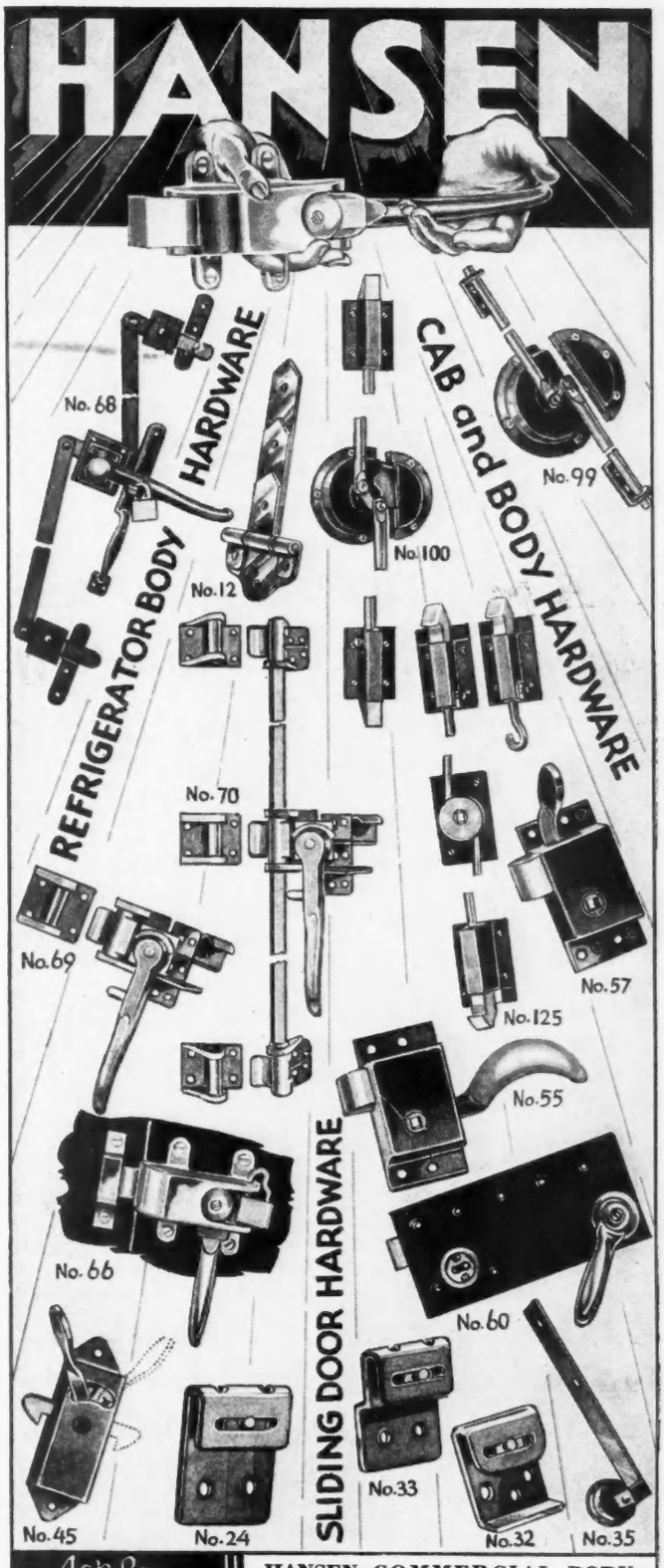

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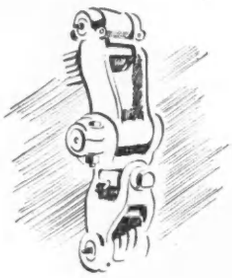

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Ears to the Ground

INFORMATION WHICH IS INSIDE, ADVANCE OR JUST UNUSUAL

Gasoline Globule

According to a gentleman in whom we have a great deal of faith, one of the manufacturers of popular-priced passenger cars will market his 1937 production under a guarantee of 30 miles per gallon of gas. If anyone else had so informed this department we would not have given the information any space.

Trailer Tune

As these items were moving toward the press one of this department's spies galloped up with his horse in a lather and himself in a sweat. He had a photograph (reproduced elsewhere in this issue) but not much information on the automatic trailer which received some mention here last month.

Otto's Opportunity

A new Diesel engine bearing the proud label Otto is hiding somewhere in the fleet of one of the country's large refiners. This department has been unable to get its lens on the engine or its hands on any pertinent information. New men will be assigned to the case if more information is not soon forthcoming.

Stainless Steel Story

If our information is correct you will soon be able to buy stainless steel trailers from several sources. The trailers will be chassisless and will come in standard sizes. Such detail leads this department to observe that the trailers will come prefabricated and knocked down from a single manufacturer.

English Enterprise

Our international spy reports that English engine designers are giving quite some thought to supercharging Diesel engines. What with a bad static condition and the air filled with flood messages at press time we did not get all of the details but it seems that so far designers have been able to improve the power-to-weight ratio 22 per cent with this device and reduce the original cost per horsepower 15 per cent. All of this because it is much simpler to blow a Diesel engine than it is a spark ignition engine with a carburetor.

Pump Problems

Several engine makers are working with the problem of incorporating the water pump into the engine design so that the pump is an integral part of the engine instead of a sore-thumb accessory. If they succeed the water pump will be lubricated by the pressure system with lubricant from the crankcase.

Battery Banter

A new dashboard indicator is about ready for the market that will tell the driver at a glance if there is enough water in the battery. Now if someone will market some zipper floor boards, the fleet mechanic's life will be worth living again.

Defroster Diagram

A mentally agile gentleman named Plank of Grand Rapids, Mich., has sent us a blueprint of a ventilating

(Turn to Page 143. Please)

Truck and Shop Equipment Issue

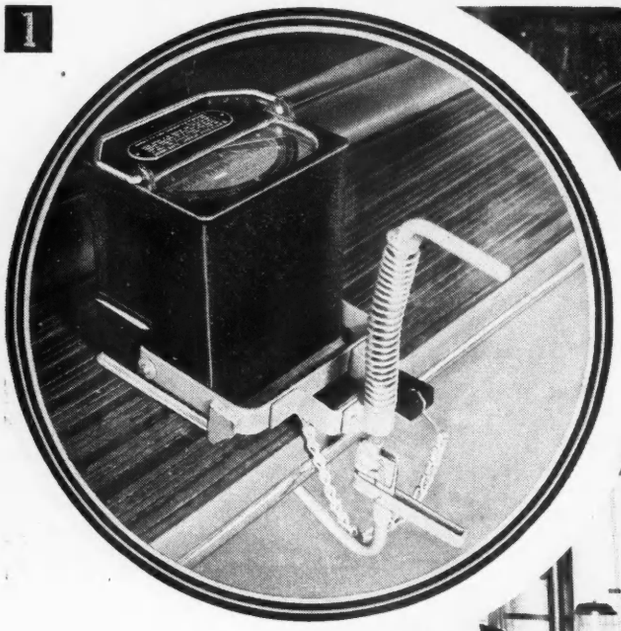
The following pages represent an unusual editorial effort which, we hope, will find favor with our 25,000 fleet readers.

Its purpose is to familiarize fleet managers and shop superintendents with the latest developments in special truck equipment and shop equipment at a time of the year when they are planning fleet expenditures. If it serves them as a guide in making purchases that will result in greater operation and maintenance efficiency, the editors will not have perspired in vain.

Never before has so much informative material about equipment been placed between the covers of a publication. This was made possible by the splendid cooperation of hundreds of manufacturers. We bow a grateful acknowledgment to them and hope, moreover, that they will be tangibly rewarded by the fleets themselves.

The special truck equipment articles need no comment. The shop equipment material, we should like to point out, has been classified in four main groups: Safety, Appearance, Economical Operation, and Universal Shop Equipment. Fleet operators, we know, will not have to be persuaded to see the logic of this arrangement.

Each article contains a directory of manufacturers who are prepared to extend every cooperation in supplying additional information. Write them direct. Many of the manufacturers have special advertisements in this issue which should be consulted, of course. And if Commercial Car Journal editors can be helpful in any way, consider them at your service.



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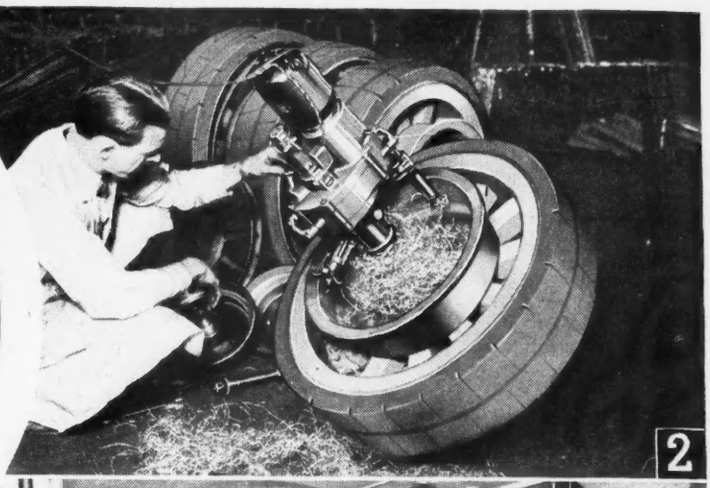

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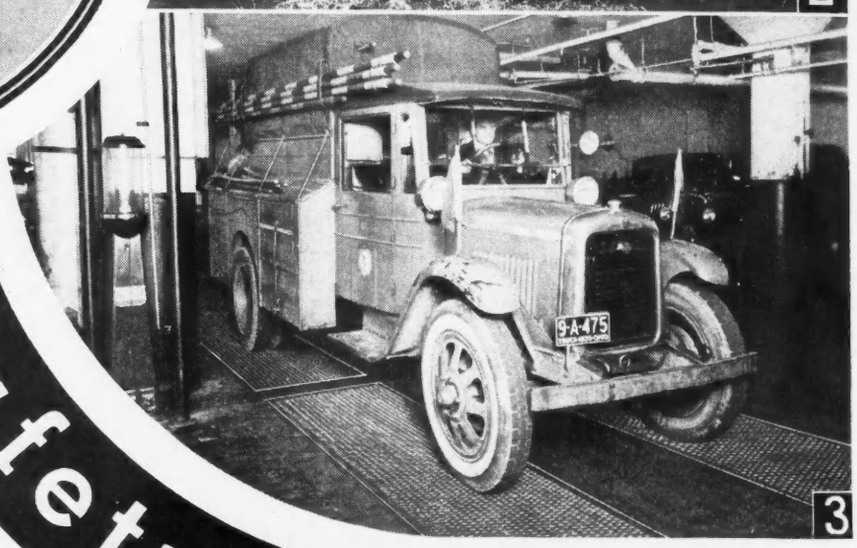

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Safety Starts In

FLEET operators themselves are authority for the fact that safe operation begins in the shop. All safe driving education programs are based on the assumption that the vehicles are mechanically safe all of the time that the drivers are responsible for them. These safety programs cost money and no fleet operator has any desire to waste money and effort by attempting to place responsibility on a driver when he knows it belongs on his own front doorstep because the driver was started out with the handicap of a mechanically unsafe vehicle. The shop personnel have a justifiable alibi if the fleet operator has not kept up with the march of progress by supplying them with modern equipment, efficiently maintained.

The actual need for safety equipment has been created since fleet shops became an important factor in the maintenance of highway vehicles. Thus the technique of maintaining a fleet has changed and there is the ever-present danger of continuing an ineffectual shop policy simply because it was successful years ago.

Fifteen years ago 15 miles per hour was a good speed for a truck to transport its load over the highway, and the load was considered enormous if it scaled at five tons. At those speeds and with those loads it was not much of a problem to maintain steering apparatus and brakes. With a little intelligent attention these parts could be made to perform their respective functions continuously as well as their original design would permit.

TODAY with the speed of trucks limited only by the laws of the states through which they pass and with the weight limited only by the same restraining factor, we find trucks moving goods over the highways at 40 m.p.h. with loads greater than 30,000 lb. These two paragraphs are, in brief, the history of the need for safety shop equipment.

Sadly, the impartial observer must admit that some fleet operators are still thinking in terms of 15 m.p.h. trucks and 5-ton loads when it comes to front-end and brake maintenance. Many modern vehicles are used to fill modern requirements of speed and load, but they do not get modern maintenance. The observer's sorrow is caused not only by the actual physical danger to the persons who may be involved in an accident caused by a truck that cannot be controlled properly, but by the needless high cost of maintaining vehicles inefficiently. The melancholy spirit of our observer is based upon facts and not theory. A recent shop equipment survey shows that of 104 fleet operators participating only 49 had toe-in gages, 22 had camber gages, 22 had caster gages and six had axle-straightening equipment. For brake work 40 fleet operators had brake relining machines, 11 had brake drum lathes, one had a brake tester of the stationary type and eight had portable brake testers. Most

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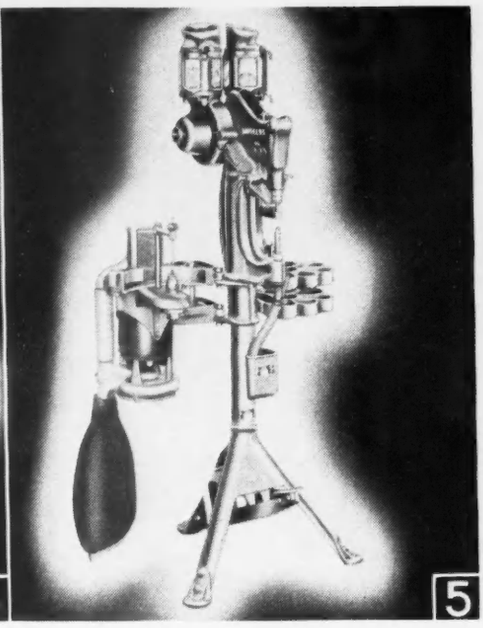

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"Savety First" Shop Equipment Makers

KEY: a—wheel alignment equipment; bt—brake testers; bl—brake lining machines; d—decelerometers; bdl—brake drum lathes.

American Instrument Co., Silver Spring, Md. (d)

Bean, John, Mfg. Co., Lansing, Mich. (a, bt, bdl)

Bear Mfg. Co., Rock Island, Ill. (a)

Bee Line Mfg. Co., Davenport, Iowa (a)

Bendix Products Corp., South Bend, Ind. (a, bt, d)

Breeze Corp., Inc., Newark, N. J. (bl)

C & C Sales Corp., New York City (bt)

Chicago Rivet & Machine Co., Chicago, Ill. (bl, bdl)

Lempco Products, Inc., Bedford, Ohio (bdl)

Riess Mfg. Co., Kokomo, Ind. (a, bl)

Shepard-Thomason Co., Los Angeles, Calif. (bl)

South Bend Lathe Works, South Bend, Ind. (bdl)

Stiles-Medart Co., St. Louis, Mo. (bl, bdl)

Thermoid Rubber Co., Trenton, N. J. (bt)

United States Asbestos Div. of Raybestos-Manhattan, Inc., Manheim, Pa. (bl)

Weaver Mfg. Co., Springfield, Ill. (a, bt)

1. Friedli brake tester distributed by Bendix tests brakes on the road. 2. Stiles-Medart portable brake drum lathe turns drums anywhere. 3. Operators play safe with the Weaver four-wheel brake tester of the "run-on" type. 4. Bean wheel balancer of the dynamic type. 5. Shepard-Thomason brake lining and grinding machine assures fast and effective work. 6. Powerful hydraulic jacks supply pressure to straighten axles cold on this Bear axle press mounted on a frame straightener

Reference Articles

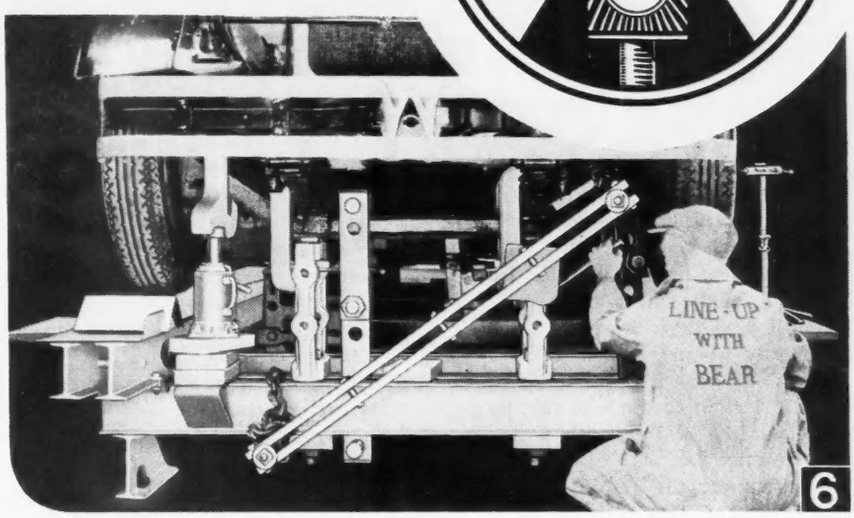
Front-End Alignment Lines Up Savings—Oct., 1934, p. 20.

When Seeking Economies Don't Overlook Front-End Alignment—June, 1935, p. 29.

Front-End Alignment Specifications—June, 1935, p. 30.

A Good Leg Is a Legacy When the Stake Is Safety—July, 1935, p. 22.

Fleet Shops



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of these fleets had from five to 25 trucks.

DESIGNS and designers have progressed. Vehicle design makes trucks capable of filling modern requirements as long as the trucks remain in their original condition. The fleet operator can prove this to himself and most of them do by testing the truck before they purchase it. Wear, maladjustment and misalignment change this condition and make it impossible to control the truck, at least to some degree. Shop equipment manufacturers specializing on front-end equipment and brake equipment have kept pace with the demands of modern trucks by producing shop equipment which makes it possible to maintain or restore trucks that have seen service to their original condition. Equipment not only makes it possible to keep the truck in original condition, it makes it cheaper to do so than to operate a truck that has been neglected.

Let us confine ourselves to the front ends for a moment. The most important inherent advantage of the truck as a means of transportation is that it can be steered; that it will turn corners at the will of the driver so that it can be driven to the place that the driver

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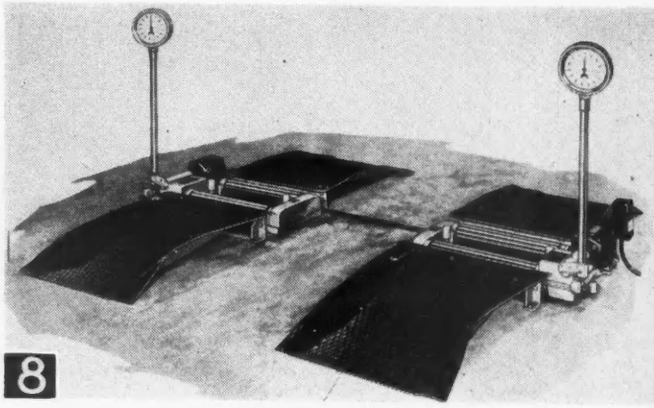
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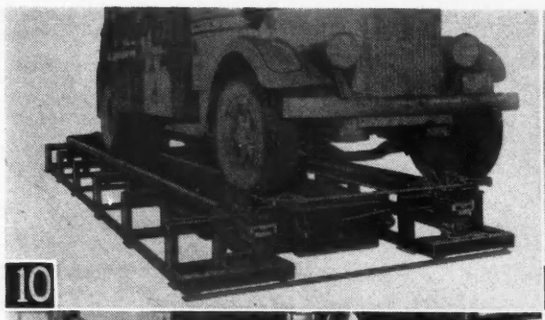
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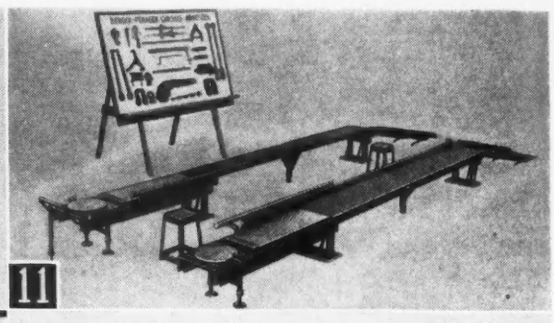
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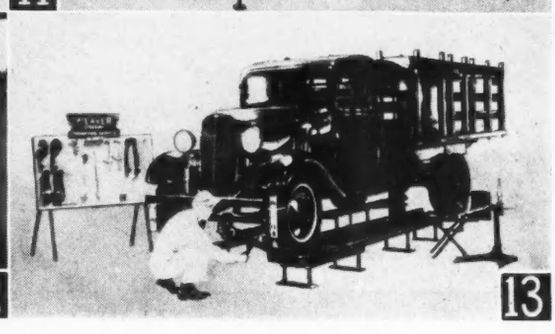
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wants it to go. It is point-to-point transportation. The advantage next in importance is that it will travel from point to point and carry its load faster than any other means of transportation.

IN order to get flexibility of direction with the speed demanded of modern transportation, the truck engineer has designed into the steering apparatus of the truck a geometry or set of positions for the various units that he has learned through long painful experience will make it possible to steer the truck satisfactorily around curves and corners and will prevent it from steering itself from a straight course with the steering wheel in the straight ahead position. The various positions of parts of the steering apparatus are inter-related to a degree that a fault in one destroys the value of all.

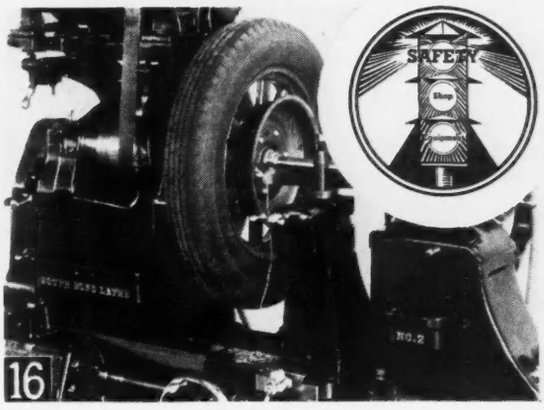
Most important in front-end alignment is the toe-in of the front wheels, the camber of the front wheels, the caster of the axle and the inclination of the king pins. The specifications for the relative positions of the wheels and axles are given by the manufacturer of the truck in degrees or fractions of an inch. These specifications describe the position of these parts when the truck is new and operating as near 100 per cent as it is possible to make it.

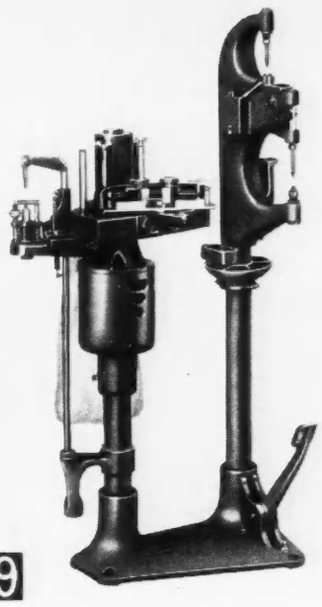
The specifications must be checked with instruments since they cannot be determined by the eye or with the use of ordinary hand tools. Once the amount of correction necessary is determined, it is possible to go ahead with the work of correction which involves the use of other equipment.

Hence the front-end equipment falls into two classes. One class is made up of equipment that is used to determine what, if any, correction is necessary. This type of equipment might be called diagnosing equipment because it does not actually correct or repair any condition. It merely makes the mechanic aware of what must be done to keep trucks operating efficiently. This equipment in the final analysis is a set of gages with the proper fixtures for application of the gages to the parts that need such delicate attention. This type of equipment is to the mechanic what the thermometer and stethoscope are to the doctor.

The other type of front-end equipment does the brute work of actually correcting the faulty condition. The

7. Thermoid Tru-Check tester gives an accurate and quick reading on the condition of brakes. 8. The Bendix-Cowdrey two-wheel brake tester gives an accurate test on brake operation with wheels moving. 9. Distance in feet to stop from 20 m.p.h. are indicated on the American Instrument brake decelerometer. 10. Bee-Line Super Model chassis aligner with universal press for straightening operation will easily handle heavy-duty trucks. 11. The Bendix-Feragen chassis analyzer accurately inspects caster, camber, king-pin, toe-in, chassis frame and front axle. Turn tables are built-in. 12. The built-in Bean wheel aligner permits a quick, accurate check of all steering conditions. 13. Tire scuffing, wander, weave or shimmy are all taken in stride by the Weaver wheel aligner





14. Manley's brake drum truing machine automatic in operation requires only a few minutes to be set up for making a cut that will reestablish perfect contact between the brake lining and drum. 15. Bendix wheel balancer of the dynamic type. 16. The 36-in. South Bend large swing lathe for truing brake drums can swing all types of wheels, single or dual with tire attached up to 36¼ in. in diameter. 17. U.S. Asbestos brake reliner No. 865 composed of countersink, built-in lining grinder and riveter particularly adaptable for truck brakes. 18. Riess Model D-5 combination brake lining machine features the 10-to-1 principle of power application and easily handles all truck and bus brake jobs. 19. Chicago Rivet & Machine brake reliner handles all size brake shoes

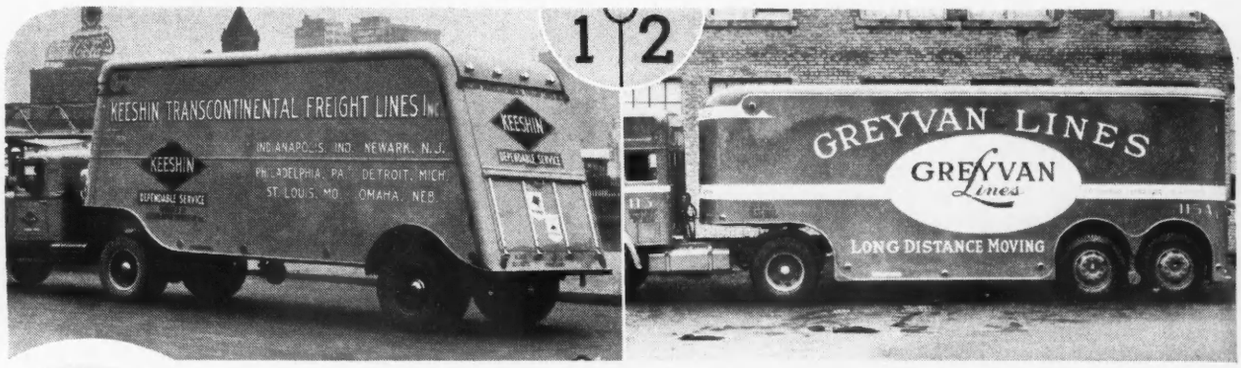
basis of this equipment is a power tool such as a jack with the correct fixtures to make it possible to apply the power to the right parts in the right position in the right quantities. This equipment corresponds to the scalpel in the surgeon's handbag.

When the loading and speeding up of trucks began in earnest it soon became apparent that brakes, other than the curved vise-like clamp that served up to that time, would be required if the loaded-up and speeded-up trucks were to stop in anything like the required time or space. The first intimation of what was to come was when engineers began to talk about wrapping action. Next came the use of power, either vacuum or pressure, as a means of applying brakes. The use of servo mechanisms and power operation was warning enough that brakes had become important, that the service demanded of them was severe and that there was going to be trouble if they were not maintained in their original condition so that they could operate at peak efficiency.

Brake lining went in for some complete changes to meet the demands of the new service and, of course, the methods of applying it had to be revolutionized. Lining had to be mounted on shoes so that it would not pull loose under great strain and still rivets had to be countersunk deeply enough to permit maximum wear from lining. Hand and hammer methods on the vise top proved unsatisfactory and had to be replaced by the machine and the use of a brake lining clamp. Surfacing brake lining with a grinder became popular and is indicative of the precision required in all brake work. Brake drums, despite new hard qualities, scored and brake drum conditioning became an important part of brake maintenance.

MOST important of all is the change in brake testing methods. From the haphazard skid and look method which did not tell a very accurate story, brakes have progressed in importance to the point where really scientific instruments for testing their effectiveness are being used. Some of these are for mounting in the floor where the trucks pass over them and register. Others are carried or wheeled to the truck, where they test one wheel at a time

(TURN TO PAGE 146, PLEASE)



TRAILERS Tell a

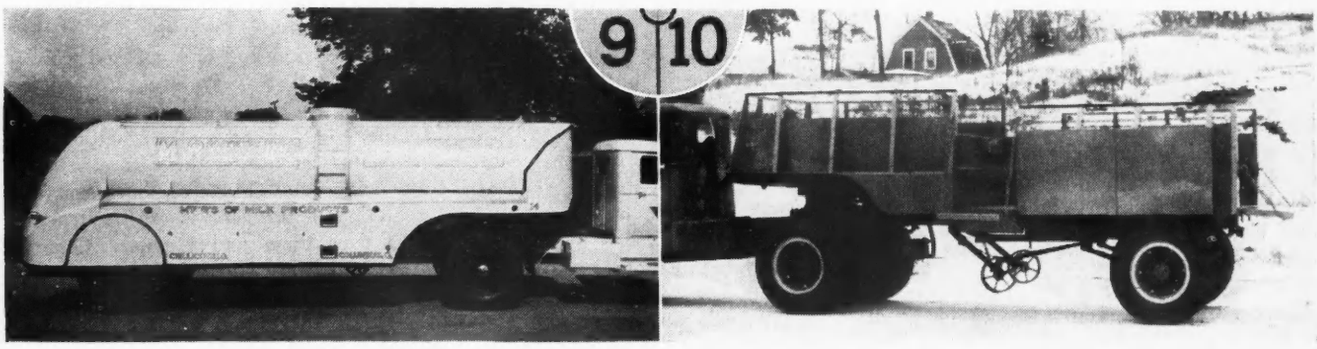
THE principle that a man, beast or a self-propelled mechanical vehicle can pull more than it can carry remains the same but trailer design has changed. It has been changed to take full advantage of the principle that gives the trailer inherently greater load-carrying capacity, and it has been refined to permit the use of the latest ideas in mechanical construction and developments in light-weight metals.

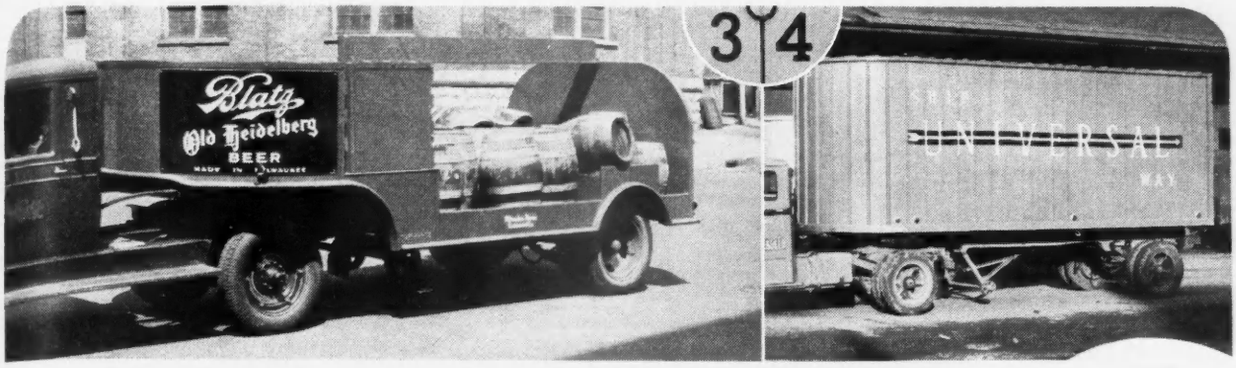
From the crude cart that was pulled by a truck in the same irresponsible fashion as a horse pulls a wagon, the trailer has become a carefully designed unit of highway transportation. Safety and economy of operation were the goals which trailer operation had to reach before it could be accepted as an integral part of highway transportation. The fact that trailer usage has increased 500 per cent in the last seven years provides evidence that trailer design and improvements have met with the approval of the operators.

THE trailer was born, so to speak, with certain natural advantages. Important among them is the king pin in the fifth wheel. This king pin is just as much a part of the steering gear as are the two king pins in the front axle of the tractor because this type of coupling provides a flexible joint in the center of what would otherwise be a long wheelbase rigid truck. The ability to turn from the middle as well as from the front makes it possible to get a tractor-trailer combination through tight turns and in cramped quarters that are impossible for a straight truck of similar capacity to negotiate.

Shuttle operation is another exclusive accomplishment of trailer operation. By using trailers it is possible for the loading crew to be busy loading while the driver is busy driving, with the result that goods get moved faster. In other words the container that actually houses the load is the only

1—Fruehauf semi with insulated van body roughly 24x8x7. 2—Four-wheel van semi by Fruehauf. 3—Trailmobile semi with Highland beer body. 4—Corrugated pressed steel freight body on Trailmobile. 5, 6—Unusual Highway trailer with all-aluminum 3000-bushel grain body. Weight 5500 lb.; capacity, 15 tons





Tale of Economy

7—Shotwell, stainless steel, chassisless semi-trailer fabricated by Budd, weighs 5210 lb. complete. 8—B & J tandem axle semi. 9—General Motors drop-frame trailer with insulated stainless steel tank. 10—Edwards semi with special body for gas cylinders. 11—Kingham trailer with round-nosed van. 12—45-ton Utility low-bed

part of the equipment that stands idle for loading or unloading. The expensive machinery that supplies the means of locomotion can be engaged in moving other containers or trailers to other destinations while the strong arm squad on the platform prepares another load.

In addition to the points already listed in favor of trailers and trailer operation, there is the matter of weight distribution on the highways. Since the weight-bearing axles are further apart than on any other type of vehicle, the weight is distributed over a larger area. This has been recognized by various legislatures with the result that these bodies have passed laws in many places which permit the hauling of greater gross loads on the public highways. To be exact, the laws of 42 States favor

TRAILERS
Special Truck Equipment

Directory of Makers

Austin Trailer & Equipment Co., Muskegon, Mich.
B & J Trailer Co., Chicago, Ill.
Butler Mfg. Co., Kansas City, Mo.
Columbian Steel Tank Co., Kansas City, Mo.
Edwards Iron Works, South Bend, Ind.
Fitz-Gibbon & Crisp., Inc. Trenton, N. J.
Fruehauf Trailer Co., Detroit, Mich.
General Motors Truck Co., Pontiac, Mich.
Gramm Motor Truck Corp., Delphos, Ohio.
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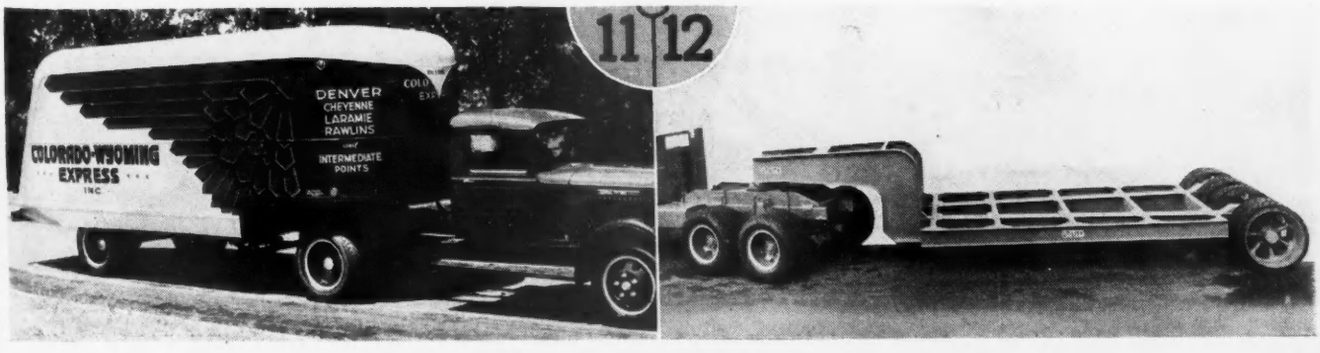
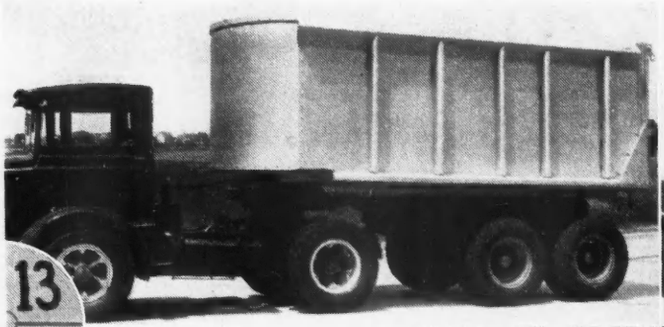
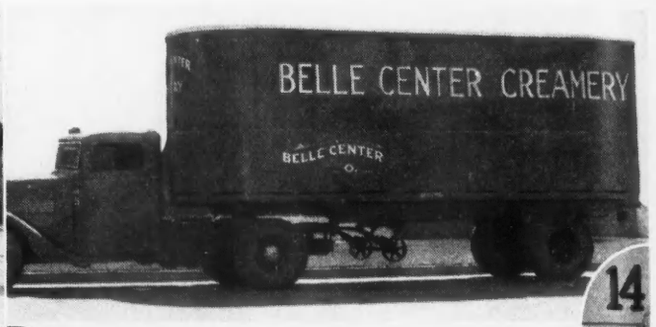
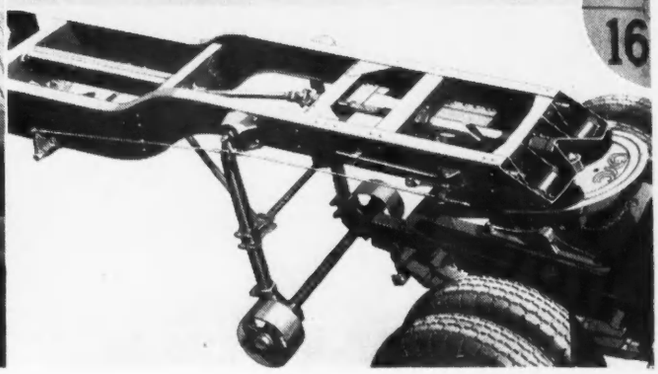
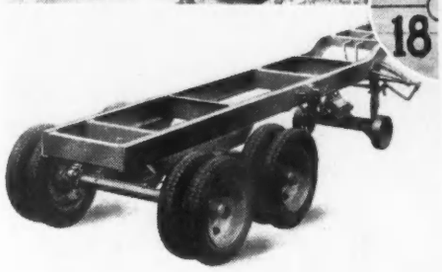
Kingham Trailer Co., Louisville, Ky.
Mack-International Motor Truck Co., New York City.
Mechanical Handling Systems, Inc., Detroit, Mich.
Nelson LeMoon Truck Co., Chicago, Ill.
Premier Trailer Co., Indianapolis, Ind.
Spencer Trailer Co., Augusta, Kansas.
Trailer Co. of America, Cincinnati, Ohio.
Utility Trailer Mfg. Co., Los Angeles, Calif.
Whitehead & Kales Co., Detroit, Mich.











13—Highway four-wheel semi with Heil aluminum 22-yd. dump. 14—Gramm trailer with semi-insulated body. 15—GMT trailer with corrugated steel body. 16—View of GMT fifth wheel. 17—Stripped Mack 3-5-ton semi chassis. 18—Nelson Le-Moon two-axle semi. 19—Light open-top van for light cargo on Fitz Gibbon & Crisp Universal trailer. 20—Trailmobile with streamlined Gar Wood four-compartment tank.

the tractor-trailer combination over the four-wheel truck in this respect while the laws of 25 States go still further and favor the tractor-trailer over the six-wheel truck in the amount of gross weight permitted.

SOME industries might be lulled into a sense of security if fortified by such natural advantages as trailers possess and by legal recognition which results in privileges denied other types of truck operation. They might prefer to rest on their laurels rather than spend time and effort on development work. Such a policy was doubtless open to the trailer industry as an industry but it chose not to adopt it.

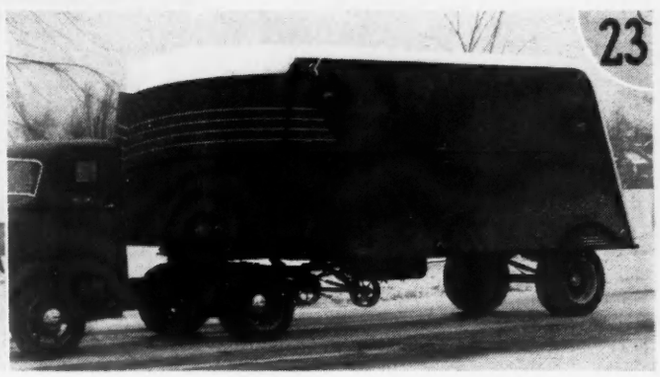
From the very first, trailer engineers have been striving to reduce the hazards of trailer operation and their efforts have been richly rewarded. The first trailers which were little more than carts had no brakes, so brakes became one of the first concerns of the trailer manufacturer. The adoption of brakes proved very quickly that truck brakes would not be sufficient—that trailers had braking problems all their own. Accordingly trailer brakes and brake hook-ups were developed. Then came the job of determining the relation of the trailer brakes to the tractor brakes and synchronizing the brakes once the desirable point was determined. Better springing, lower center of gravity and many changes in fifth wheel construction to make it foolproof and break-away proof all contributed to safe operation of the trailer.

To add to the load that was already greater than a truck could carry, bodies of aluminum and light-weight steels were worked out which changed the ratio of trailer weight to pay-load considerably. Recently in the quest for lighter weight, trailers have been built

21

TRAILERS
Special Truck Equipment

22



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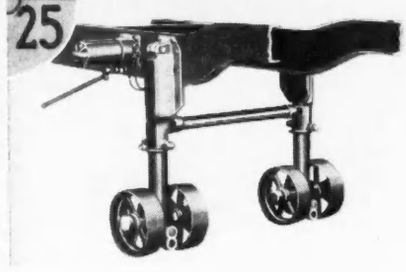

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21—Completely automatic Fruehauf semi-trailer which has been developed by Fruehauf. 22—New Premier trailer features new frame construction. 23—Beaver-back, round-nosed van on Edwards trailer. 24—Mechanical Handling semi with special body having overlapping panel roof. Panels have handles with spring locks. 25—Austin trailer landing gear. 26—Spencer pole trailer. 27—Whitehead & Kales auto trailer.

without any chassis at all. This construction, called monocoque, transfers the weight-carrying capacity from the chassis to the girder-built body and reduces the vehicle weight considerably. The use of new metals has made it possible. Several types of trailers of two and four wheel types were designed for different kinds of operation.

Further contributions to economy of trailer operation are automatic operation of the landing gear so that it is impossible to uncouple the tractor until the landing gear is in position to support the front end of the trailer and better control of the whole uncoupling operation, which makes it possible to uncouple without loss of time and in loading docks where the space is restricted. Here again the effort did not stop. Vocational bodies have been a high spot in trailer development and today we find at least as many novel bodies adapted to particular businesses on trailers as there are on trucks.

THE users of trailers express their appreciation of all of these efforts in glowing terms and leave a trail of testimony of a factual nature through much of their correspondence. The following quotations from operators' letters tell their own story:

"We replaced a six-wheel truck (5-7½ tons) and a four-wheel trailer with a 4-ton tractor truck and a semi-trailer. We thus cut our first cost from $11.200 to only $5800. Over a period of a year our saving in gross operating expense was 21 per cent with the tractor-trailer hauling the same tonnage during the year. This does not include the saving made in depreciation."

Another operator writes:

"Our tractors and semi-trailers give

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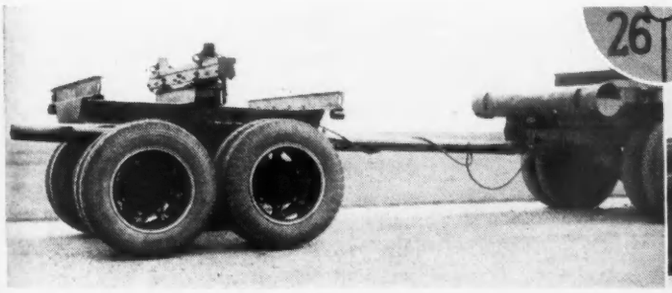

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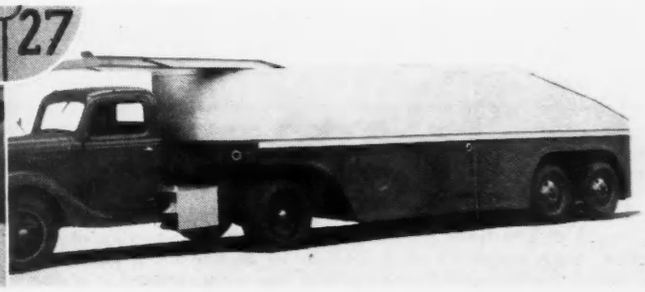
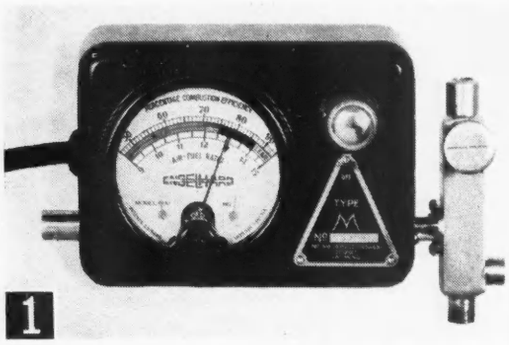


27

Tune-Up Devices Turn



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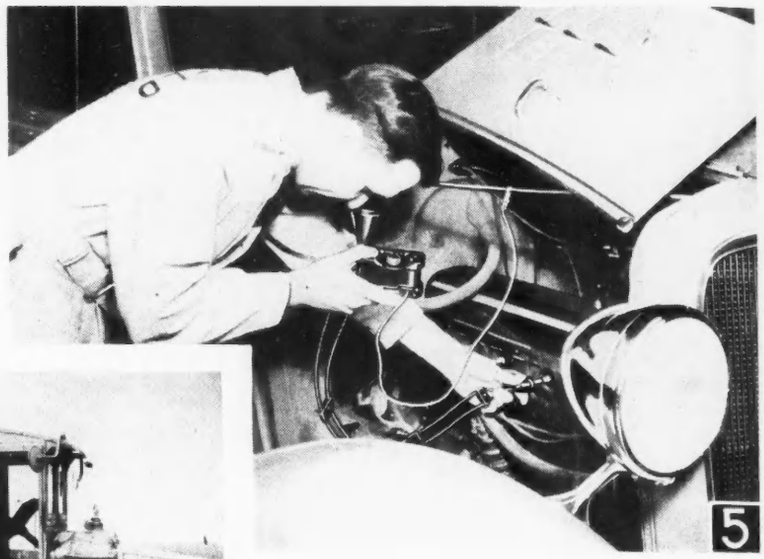

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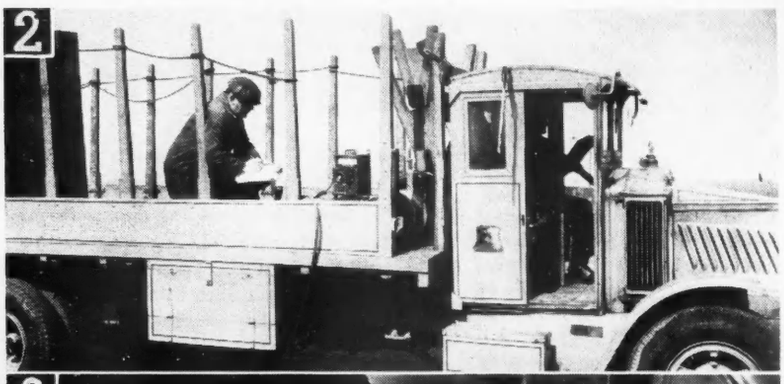

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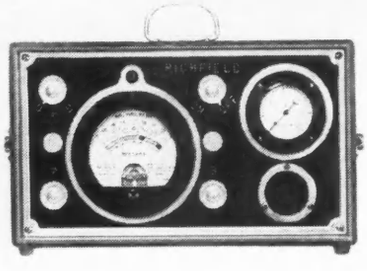


1—Engelhard Type M exhaust analyzer with one knob control designed with dry cells in the instrument circuit. 2—Cambridge exhaust analyzer especially designed to permit continuous analysis to be made on the road. 3—Hays analyzer operates directly from the end of the exhaust pipe and requires no electrical connections. 4—The portable Zenith exhaust analyzer makes it possible to determine automatically and continuously what mixtures are being supplied under road conditions. 5—The AC spark plug tester is an efficient unit to determine spark plug conditions on short notice. 6—A complete tune-up job may be done with this Weidenhoff motor tune-up unit. 7—The Lantz-Phelphs exhaust gas tester compact in a modern cabinet

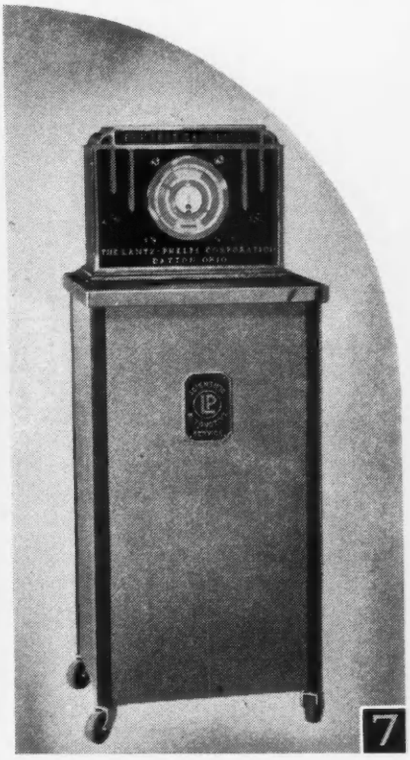
ECONOMICAL operation is the shop's contribution to net profit. The amount of work that a truck can do is known and since mileage rates are fairly well stabilized the amount of income that a truck can earn is known. The amount that a truck can earn does not vary whether it is carrying packages or tons for a fee or whether it is engaged in completing a sale. To get the goods from where they are to where someone wants them costs money regardless of whose truck transports them and the money thus earned is income for the truck.

The largest variable in fleet operation is operating cost. Operating expense in normal proportion leaves a certain amount for profit and every cent that a fleet operator can chisel out of operating expense can be added to profit. Conversely, when operating expense gets out of hand it can grow to the point where there is no profit. Thus economical operation is the focal point.

Mechanically, economical operation is the science of doing the things that any good mechanic knows should be done before a mechanical failure makes it necessary to do them and some more work along with it. It is the art of preventing excessive unnecessary wear, road breakdowns with subsequent tow jobs and lost time, and of sooting up the landscape by blowing good gaso-

Up Savings

6


7

Fleets Tune-In On Economical Operation With Exhaust and Motor Analyzers, Compression and Vacuum Gages, Spark Plug Testers and Cleaners

line and oil through the exhaust pipe.

The engine provides the most fruitful application for the study of economical operation because this unit is the natural spendthrift of the entire truck. Naturally it is at this point that most of the devices designed to promote economical operation fit into the picture. With the help of shop equipment intended to promote economical operation the shop personnel are able to keep the engine operating at peak efficiency and detect with certainty the indications of serious conditions that will eventually lead to expensive repairs. Thus we find that diagnosing equipment is closely allied to that used in keeping the engine tuned. In arriving at a state of engine tune satisfactory for economical operation the mechanic automatically writes the order for the preventive maintenance necessary to prevent serious breakdowns, or in checking, to circumvent serious breakdowns, the mechanic automatically tunes the engine.

The exhaust gas analyzer, a fairly recent development, has done much to aid in the cause of economical operation. It was the first piece of equipment to give a definite check on carburetion and carburetors. However, it had not been in use for very long until mechanics began to read movements on the dial and to interpret them into terms of mechanical difficulties. Various types of fluctuations of the indicating needle tell a story to the experienced operator and he knows a great deal more about the internal condition of the engine than he ever knew before.

THEN there is the engine analyzer or test bench with all of its component parts. The elaborate ones are essentially a combination of gages and testing instruments, all of which are procurable separately, located in a convenient panel or work bench with all of the necessary fixtures and leads to apply them to the work they are to do.

In the more complete ones there are a full range of electrical testing tools, including condenser testers, coil testers, synchronizing equipment for the double breaker distributor along with ammeters and voltmeters. Nesting in posi-

(TURN TO PAGE 48, PLEASE)

"Tuner-Upper" Makers

KEY: tb—test benches and parts; vg—vacuum gages; cg—compression gages; a&v—ammeters and voltmeters; spc—spark plug cleaners; spt—spark plug testers; ega—exhaust gas analyzers.

AC Spark Plug Co., Flint, Mich. (spc, spt)
Allen Electric & Equipment Co., Kalamazoo, Mich. (tb, ega)
Cambridge Instrument Co., New York City (ega)
Champion Spark Plug Co., Toledo, Ohio (spt)
Defiance Spark Plugs, Inc., Toledo, Ohio (spc, spt)
Electric Heat Control Co., Cleveland, Ohio (tb, ega)
Engelhard, Chas., Inc., Newark, N. J. (ega)
General Electric Co., Bridgeport, Conn (a&v)
Hays Corp., Michigan City, Ind. (ega)
Hoyt Electrical Instrument Works, Boston, Mass. (a&v)
Kastar Specialty Mfg. Co., New York City (spc)
Lantz-Phelps Corp., Dayton, Ohio (ega)
Moto Meter Gauge & Equipment Div., Electric Auto-Lite Co., LaCrosse, Wis. (vg, cg, ega)
Shurhit Products, Inc., Waukegan, Ill (tb, cg, a&v)
Stromberg Motoscope Corp., Chicago, Ill. (tb, cg)
United States Gauge Co., New York City (cg, vg)
Weldenhoff, Inc., Joseph, Chicago, Ill. (tb, ega)
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. (a&v)
Weston Electrical Instrument Corp., Newark, N. J. (a&v)
Zenith Carburetor Co., Detroit, Mich. (ega)

Reference Articles

Examine the Exhoust for Economy, Oct., 1934, p. 40.
Tune-Ups Done in the Modern Way Pep Engines To Perfect Pitch, Dec., 1933, p. 32.
Engine Tune-Up Specifications, May, 1935, p. 37.

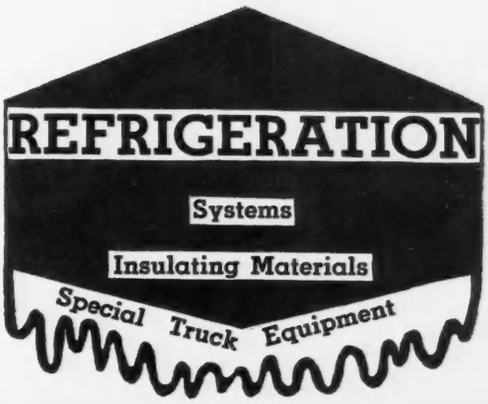
Cold Facts on Controlling

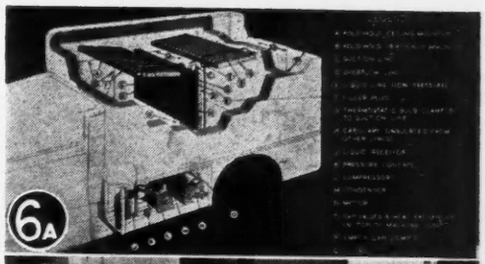
A DISCUSSION of refrigerating equipment for truck bodies compels consideration not only of refrigerating systems but also of insulating materials. And right there one is reminded of the old saw: "You purchase insulation once but you buy refrigeration continually." There is no doubting the wisdom of plentiful insulation because skimping in this respect results inevitably in higher refrigeration costs.

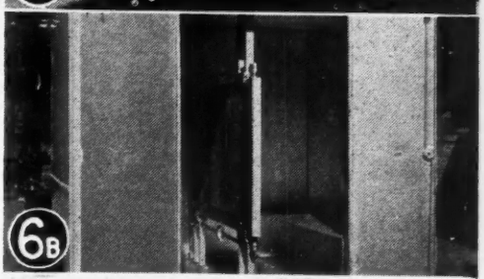
And yet, talk to an insulation expert and he'll tell you that efficient refrigeration has its real basis elsewhere than in systems and materials. He'll tell you that no matter how efficient the chosen insulation may be, the over-all effectiveness of the truck body as a refrigerated or insulated carrier depends considerably on good application and sound body construction.

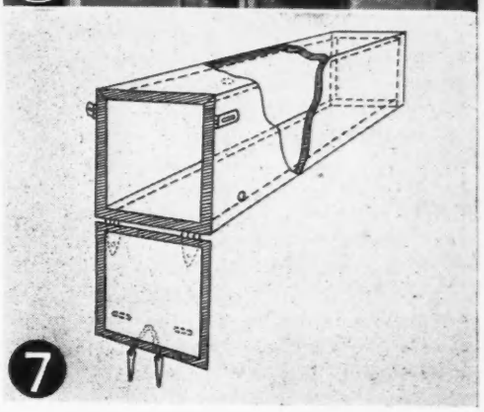
Take this as a prediction by one refrigeration expert: "Upon sound body construction rests the future of refrigerated truck transport. The field has been broadening rapidly and every improvement in refrigerated body construction will speed its progress by bringing new converts to the field."

Temperatures









1A, 1B—Fruehauf trailer with the Fruehauf circulating brine system of refrigeration. A gasoline engine pumps the brine through coils on the sides of the body. 2A, 2B—Sketch of the Ice-Fin conductor plate system for use with solid carbon dioxide. Inside loading results in preserving an unbroken line on truck bodies, as shown in the Alderney job by Fitz Gibbon & Crisp. 3—Williams Ice-O-Matic mechanical refrigeration unit installed in the nose of a semi-trailer. 4A, 4B—The McCord refrigeration system which is unique in that it uses liquid propane which, after serving as the refrigerant is used as fuel by the truck engine. 5—An example of efficient refrigeration in a three-compartment beer and ice cream job. Insulated with Dry-Zero and cork, refrigerated by Kold-Hold. 6A, 6B—Kold-Hold storage-battery refrigeration units installed. Lower is new type used in door-to-door dairy service. 7—The all-metal type of Dry-Ice bunker that is becoming widely used by common carrier truckers. The new type is collapsible and can be collapsed out of way when not needed. Construction details will be furnished to any interested carrier

And remember these suggestions which he makes: "The inner body or lining should be isolated as completely as possible from the contacts with the outer body. Every structural element connecting the two lowers the body's effectiveness. This applies particularly to metal, such as through bolts. As an example of this, the heat entry of a refrigerated body with a wall conductivity of .10 was reduced approximately 20 per cent by countersinking the hinge bolts and breaking the 3/16-in. steel plate at the bottom of the door."

AN expert in body construction adds this suggestion: "Of great importance in the construction of a refrigerated body is the sealing of the outer shell against moisture penetration which tends to saturate the insulation. Otherwise thermal efficiency is decreased and overall weight increases, causing a reduction in the allowable payload. To prevent moisture penetration all joints must be treated with a thick coat of mastic or similar substance. Likewise all surfaces in contact with insulation must be treated similarly.

"Regarding the lining for the interior, only the joint at the floor line should be sealed as described above. The joint between the side and ceiling lining should not be sealed in order to allow for dehydration of insulation. The theory upon which this statement

MANUFACTURERS

INSULATING MATERIALS

Alfol Insulation Co., New York City
American Flange & Mfg. Co., New York City
Armstrong Cork Co., Lancaster, Pa.
Balsa Wood Co., Inc., Brooklyn, N. Y.
Dry Zero Corp., Chicago, Ill.
Wilson & Co., Chicago, Ill.
Wood Conversion Co., St. Paul, Minn.

REFRIGERATING SYSTEMS

Drilee Appliances, Inc., Mt. Vernon, Ill.
Fitz Gibbon & Crisp, Inc., Trenton, N. J.
Kelvinator Corp., Detroit, Mich.
Kold Hold Mfg. Co., Lansing, Mich.
Mack-International Motor Truck Co., New York City
McCord Radiator & Mfg. Co., Detroit, Mich.
Meyer Body Co., Buffalo, N. Y.
Williams Oil-O-Matic Htg. Corp., Bloomington, Ill.

Carrying Temperatures of Commodities Transported in Trucks

UNFROZEN

VEGETABLES	
Asparagus	33-34
Beans (green)	33-34
Beets	32-40
Broccoli	32-34
Cabbage	32-36
Carrots	33-36
Cauliflower	32-34
Celery	32-34
Corn (green)	36-38
Cucumbers	36-40
Lettuce	32-40
Onions	32-36
Peas (green)	32-36
Potatoes	35-40
Potatoes (sweet)	50-55
Radishes	32-36
Squash	33-36
Tomatoes	35-40

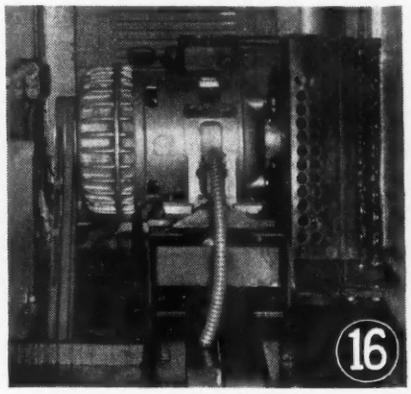
FRUITS	
Apples	32-36
Apricots	35-40
Bananas	55
Blackberries	36-40
Cantaloupes	35-40
Cherries	36-40
Cranberries	33-36
Gooseberries	36-40
Grapefruit	32-36
Grapes	32-36
Lemons	40-45
Oranges	35-45
Peaches	35-40
Pears	32-34
Plums	32-36
Raspberries	35-40
Strawberries	35-40

MEATS	
Bacon	30-35
Beef (fresh)	32-40
Eggs	33-35
Fish (fresh)	32-40
Lamb	32-36
Mutton	32-36
Oysters (shell)	30-35
Pork (fresh)	30-34
Poultry	28-30
Veal	35-40

DAIRY PRODUCTS	
Butter	20-35
Cheese	35-40
Ice Cream	5-10
Milk (sweet)	32-36
Milk (butter)	32-40

FROZEN FOODS	
Eggs	10-15
Fish	10-20
Fruits in syrup	10-20
Meats	10-20
Vegetables	5-10

Courtesy Am. Soc. Refrigerating Engineers.



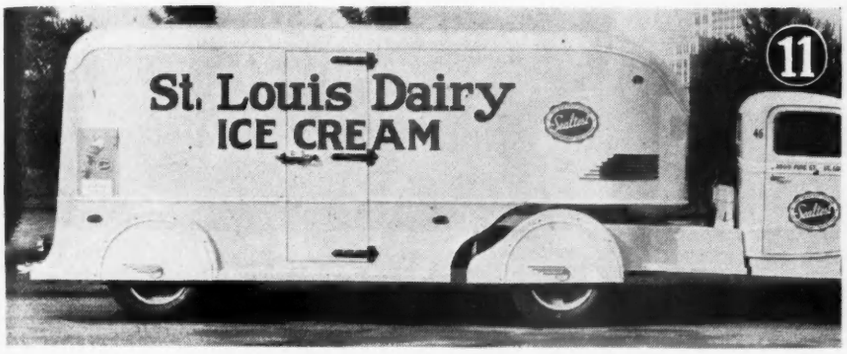
is based is that moisture condensing in the insulation, due to the difference in temperature outside of the unit and the inside walls, is attracted by the cooling medium on the interior of the body."

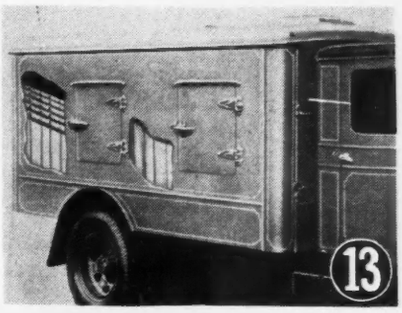
FROM details of body construction we progress to insulating materials. Those that we shall consider are not numerous but they certainly are varied. Our purpose in dealing with them here is merely to familiarize fleet operators with some of their salient characteristics, enough to give them a basis for detailed consideration.

Dry-Zero is composed of extremely fine tubular fibers from the pods of a tropical tree. These, by a process of "graining," are semi-felted into a permanent heat-resisting batt. For its "blanket" form this is stitched between rot-proofed, fire-resistant burlap to make it immune to rot, deterioration and absorption of odors. This is obtainable in widths up to 120 in. and thicknesses up to 4 in. In "sealpad" form the batt is enclosed between paper coverings and bound on the edges with muslin. A patented sealing flange is carried on the edges for sealing securely to framing members. "Sealpad" is made to specification in thicknesses of 1½, 2, 2½ or 3 in. It is also furnished in standard rolls 36 in. by 50 ft., without the sealing flange. Dry-Zero's coefficient of heat transmission for 1 in. thickness is .24 B.t.u. per hour, per square foot, per degree Fahrenheit.

Haircraft, made by Wilson & Co., comes in blanket form for side-walls and roofs and in board form (Naturzone) for floors. It consists of sterilized, deodorized hair. It has moisture-resisting qualities, is light in weight, durable and odorless. In blanket form the hair is covered with a special paper, interlined with asphalt. It comes in rolls up to 9 ft. in width and any length up to 150 ft. Or it will be cut to individual specifications at no additional cost. The conductivity of the blanket form is .263 B.t.u. per sq. ft., per hr., per inch thickness. Naturzone is the same hair compressed into board form. Standard slabs are 36 in. long, 16 in. wide and 1, 1½, 2 or 3 in. thick. Other lengths may be procured. Conductivity is .27 B.t.u.

ARMSTRONG'S corkboard combines lightness, structural strength, freedom from objectionable or contaminating odor, resistance to moisture and decay. When erected its structural strength affords a substantial base for the finishing materials and permits the elimination of excessive framing in the walls and roof. It is furnished in boards as





large as 36 in. by 36 in. It has a conductivity of .269 B.t.u. at 90 deg. mean temperature.

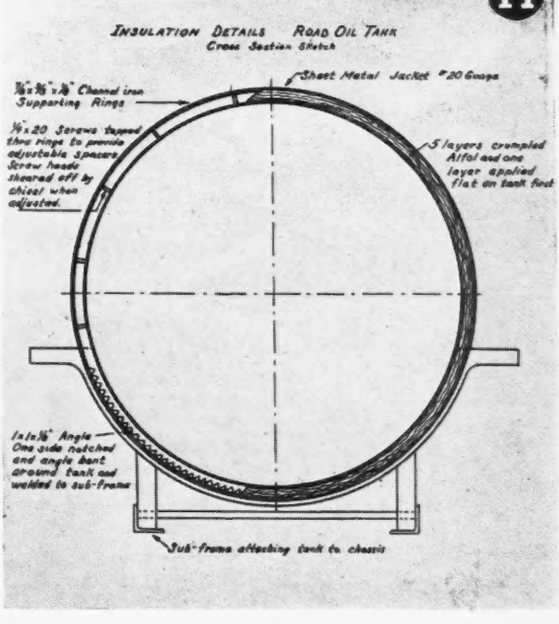
Alfol, or aluminum foil, is negligible in weight. It weighs ¼ oz. per board foot. The total insulation weight runs from 14 lb. for small trucks to 30 lb. for larger trucks. It is non-inflammable, unaffected by moisture, odorless and clean. It is an embossed aluminum foil of 98 per cent or better purity. Its maker emphasizes the fact that crumpled sheets retain their shape under vibration. Crumpled Alfol has a conductivity of .28 B.t.u. at 75 deg. mean temperature. Alfol is available in flat sheet or panel form, the conductivity of which is .204 B.t.u. at 95 deg. mean temperature.

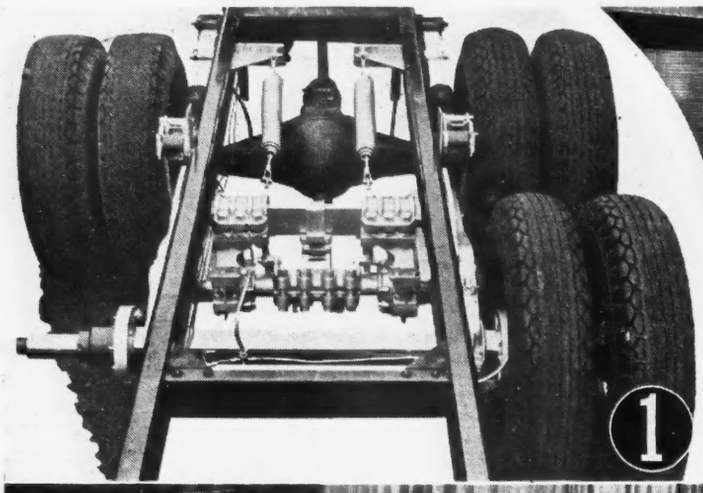
Lata Balsa Wood by volume is 92 per cent air. In addition to this extreme lightness it possesses a structural strength one-half that of good spruce. Its conductivity is .31 B.t.u.

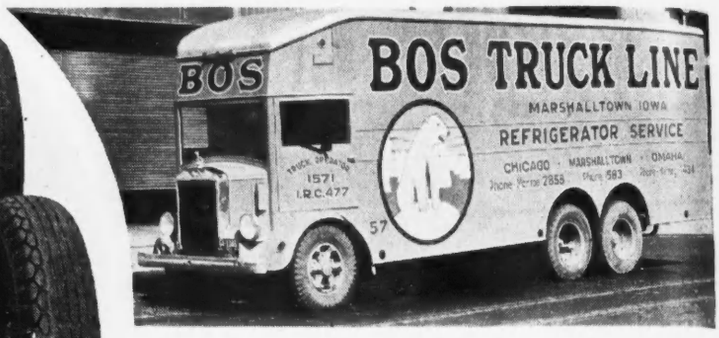
Balsam Wool, made by Wood Conversion Co., consists of a wood fiber mat, chemically treated to be moisture, fire, rot and vermin proof. Its surfaces and edges are covered with a heavy asphalt-coated paper. It comes in standard widths of 15 and 23 in. and in a

(Turn to Page 118, Please)

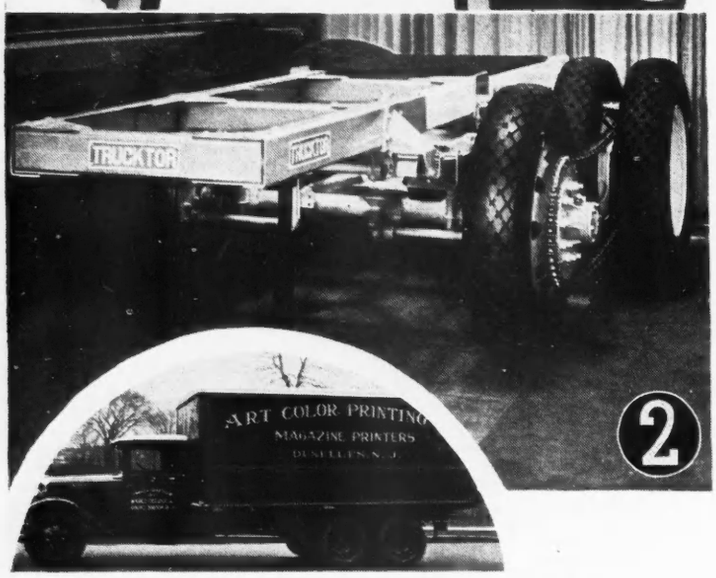
8—Refrigerated semi-trailer equipped with Mack Statotherm temperature control system which can be used with any type of refrigerant. 9—Ice cream body with Lata Balsa wood insulation and Kelvinator mechanical refrigeration. The corner sketch Balsa angle frame construction to take advantage of the wood's structural strength. 10—One type of Driice Appliances body with circulating system of solid carbon dioxide refrigeration. 11—This 1000-gal. ice cream semi-trailer has the Kold-Hold system with a Kelvinator compressor unit and Whitaker-Upp electric power system. 12—A body by Baker Raulang fully insulated with Wilson's Haircraft in sides, ends and roof and Naturzone board form insulation in floor. 13—Cutaway view showing Ferro-Therm metal insulation installed. 14—The meat body is insulated with Alfol, the aluminum foil insulant. The sketch gives insulating details for a road-oiler tank. 15—Body built by Palm Bros. with Armstrong cork insulation, Hansen body hardware and 1 hp. Kelvinator methyl unit. The front compartment is for ice cream. 16—Dynamatic Drive electric power unit for mechanical refrigeration system. On truck it operates from transmission power take-off; in garage from house-line


Insulation Details Road Oil Tank
Cross Section Sketch
Sheet Metal Jacket #20 Gauge
Supporting Rings
5 layers crumpled Alfol and one layer applied flat on tank first
Angle
One side notched and angle bent around tank and welded to sub-frame
Sub-frame attaching tank to chassis



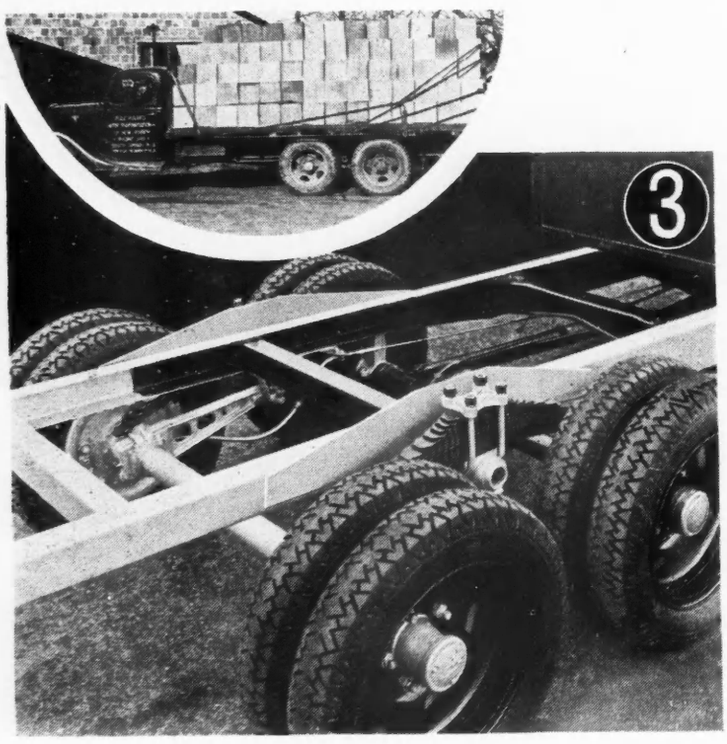


1—Truck Equipment's Truxmore third axle with gravity spring suspension, available in five sizes to fit any truck and handle every hauling problem, has patented load distribution adjuster. The Bos truck has a Model 40 Truxmore on a C H Mack. 2—Tructor third axle with chain and sprocket drive between the dual wheels for bad weather operation. Chains are easily removed to revert to single axle drive. (Inset) Model 11708HLL Tructor unit on Indiana truck model 95 with 34 x 7 tires and hydraulic



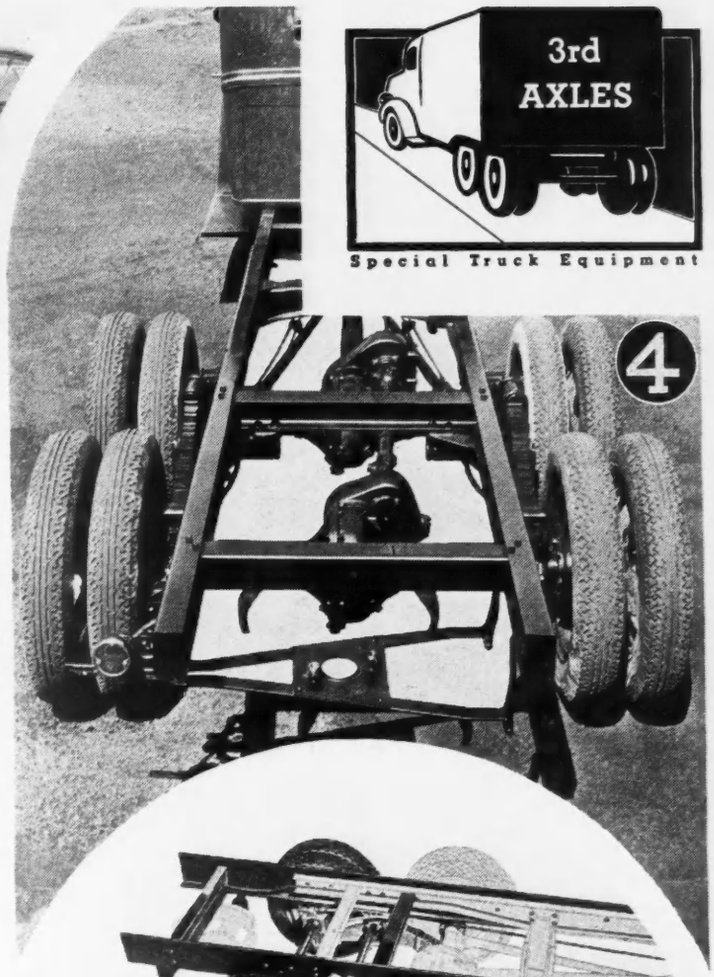
Third Axles Pay With

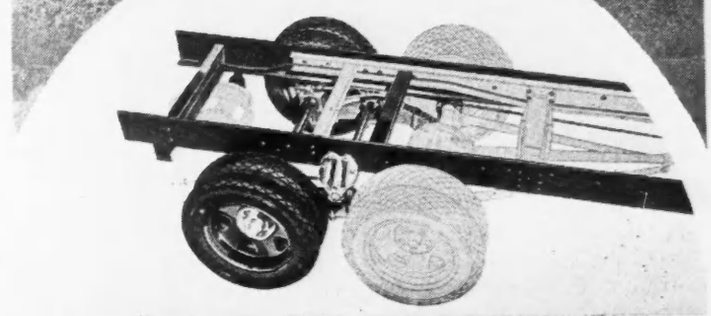
THE third axle unit, which converts a standard four-wheel truck to a so-called six-wheel truck, has undergone amazing improvements in design since that day 13 years ago when it was conceived. Once just an attachmnet that was "bolted on," most of the third axles today are equipment specially engineered to become a "unit" with the chassis into which they are placed.

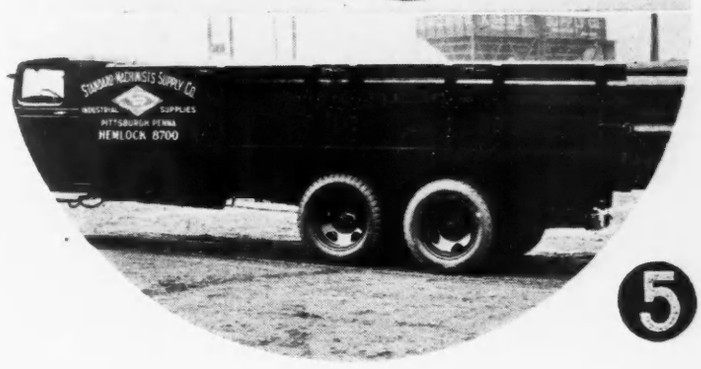


In those 13 eventful years the biggest task of third axle manufacturers was, as one spokesman for the industry put it, "to live down the unfavorable impression caused by the overselling of shoddy equipment by certain unscrupulous manufacturers in the heydays of '27, '28 and '29. However, the advantages of this type of equipment were so apparent that great strides in the perfection of engineering prinicples and details were inevitable. As a result there are many fine units on the market today, and increasing numbers are finding their way to the roads.

THE advantages claimed for third axles are numerous and impressive. A careful analysis shows that manufacturers agree upon the following advantages:







brakes booster-operated. 3—Acme third axle combines ruggedness and simplicity. Requires no attention except lubrication. (Inset) Acme third axle and Ford chassis carries 8½-ton payload. 4—Warford-equipped truck drives on both rear axles without an intra-differential. Pilgrim truck, with Warford unit and tank weighs 11,000 lb. and carries 14,000 lb. 5—Perfection third axles are designed exclusively for Ford and Chevrolet. (Lower) Perfection third axle on long wheelbase air-brake-equipped Chevrolet truck

Payloads

Decreased deadweight and increased payload;

Lower first cost and depreciation;

Lower gas, oil and tire costs considering the added carrying capacity;

Increased safety factor and lower insurance costs;

Better load distribution and reduced road shock, resulting in easier riding and prolonged chassis life;

Lower license fees in some states.

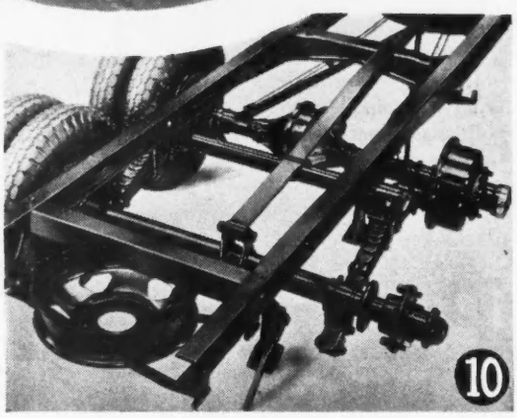
The primary advantage, of course, is the increased load-carrying capacity made available to six-wheel trucks by favorable legislation which recognizes the fact that roads are better able to stand the same load on a three-axle vehicle, than on a two-axle vehicle, because the impact reaction of a six-wheel truck is about half that of a four-wheel truck. This favorable legislation prevails in 35 states. Seven other states may in time be persuaded to join the company of the enlightened 35 because they now have laws allowing greater gross weights for three-axle tractor-semi-trailer combinations. There is evidence that interested groups are planning to give these states a load of factual persuasion. In 18 of the enlightened states there will be an effort to win the weight advantages enjoyed by the three-axle tractor-semi-trailer combination. The remaining 17 of the 35 enlightened states do not favor the semi-trailer.

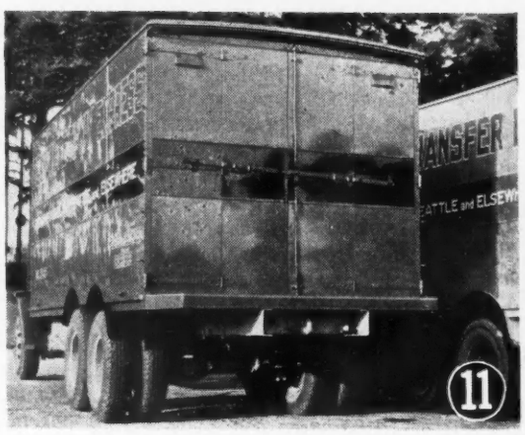
FLEET experiences with third-axle installations tell their own convincing story. Here are some typical ones:

White Line Motor Freight, of Des Moines, Iowa, operates a fleet of six Model BM Macks equipped with third axle units almost entirely on crowned

Payload Boosters

Acme Six Wheeler Co., Cadillac, Mich.
Gear Grinding Machine Co., Detroit, Mich.
Little Giant Products, Inc., Peoria, Ill.
Nelson LeMoon Truck Co., Chicago, Ill.
Perfection Steel Body Co., Galion, Ohio.
Six Wheels, Inc., Los Angeles, Calif.
Thornton Tandem Co., Detroit, Mich.
Truck Equipment Co., Buffalo, N. Y.
Trucktor Corp., Newark, N. J.
Utility Trailer Mfg. Co., Los Angeles, Calif.
Warford Corp., New York City.





6—Modern third axle by Six Wheels Inc. in which springs and torque rods form a perfect parallelogram. 8—"Zephyr" style gasoline tanker with Six Wheels Inc. third axle. 7 — Thornton Tandem third axle unit with two-speed transfer case. 9—Chevrolet truck of 22-in. wheelbase equipped with a Grico driving third axle which has Rzeppa universal joints. 10—LeMoon third axle is a simple economical unit for Ford and Chevrolet operators. 11 — More than double the usual pay load is possible on this model 35 Utility third axle equipped with 9.75/20 tires

gravel roads. Hauling loads of 12 to 14 tons it averages 6½ miles per gallon of gasoline. Schedules are maintained in spite of difficult weather conditions.

Fels & Co., Inc., Philadelphia, subsidiary handling industrial gases replaced two heavy two-axle trucks with two Ford trucks equipped with third axles. Delivery costs were reduced 25 per cent and two more jobs were ordered to replace other equipment.

Walker Freight Service, operating in New England where laws allow 40,000 lb. gross on six-wheelers or tractor-semi-trailers, hauls about a ton more payload on pancake-engined Whites with third axles than would be possible on a tractor-semi-trailer. At a hauling rate of 60 cents a hundred you can figure out the earnings yourself.

Litza Brothers, Milwaukee, Wis., has some Model A-6 Internationals with third-axle units, and has reported more than 100,000 miles on a set of 10 tires, although loads exceed the tire maker's ratings most of the time.

The Toledo Guaranty Co., Parsons, W. Va., operates a Chevrolet with third axle and semi-trailer in a saw-mill operation. The payload is approximately 40,000 lb. The company reports a per ton-mile operating cost of .0333. Average tire mileage is 13,000 miles, compared with 7000 for regular four-wheel trucks.

Donahy-Faxon Stores, Buffalo, N. Y., equipped Ford trucks with third axles to haul 7½ ton loads. The gasoline mileage was 7 per gallon. The 3-ton, two-axle trucks replaced, carrying the same loads, averaged 3 miles per gal. when new and 2 miles when traded in.

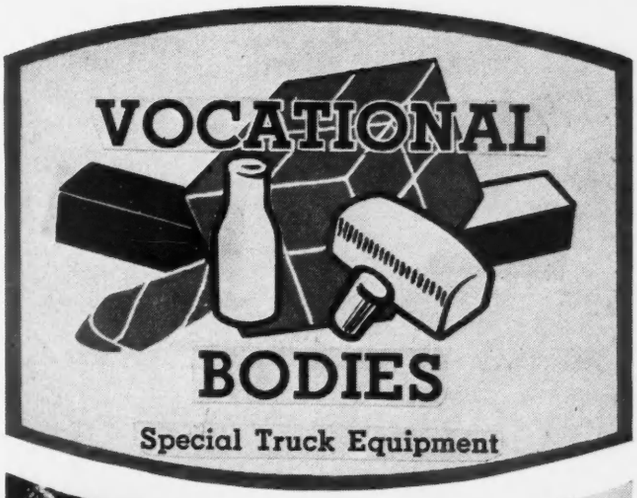
E. A. Smith, Merchantville, N. J., hauling bulk coal in a Chevrolet with third axle operated 100,000 miles in two years at a total cost per mile of .0696. For the 7-ton payload this made the ton-mile cost .01.

(Turn to Page 122, Please)

1.

Vocational Body Builders

Anthony Co., Streator, Ill.
Auto Truck Equipment Co., Pittsburgh, Pa.
Badger Auto Body Co., Milwaukee, Wis.
Baker-Raulang Co., Cleveland, Ohio.
Batavia Body Co., Batavia, Ill.
Brown Sheet Iron & Steel Co., St. Paul, Minn.
Butler Mfg. Co., Kansas City, Mo.
Columbian Steel Tank Co., Kansas City, Mo.
Driice Appliances, Inc., Mt. Vernon, Ill.
Easton Car & Construction Co., Easton, Pa.
Fitz Gibbon & Crisp, Inc., Trenton, N. J.
Fruehauf Trailer Co., Detroit, Mich.
Gar Wood Industries, Inc., Detroit, Mich.
Gerstenslager Co., Wooster, Ohio.
Giffel Body Mfgrs., Terre Haute, Ind.
Hackney Bros. Body Co., Wilson, N. C.
Heil Co., Milwaukee, Wis.
Hercules Body Co., Evansville, Ind.
Hercules Steel Products Co., Galion, Ohio.
Herman Body Co., St. Louis, Mo.
Highland Body Mfg. Co., Cincinnati, Ohio.
Highway Trailer Co., Edgerton, Wis.
Kentucky Wagon Mfg. Co., Louisville, Ky.
Kingham Trailer Co., Louisville, Ky.
Luce Mfg. Co., Lansing, Mich.
Maremont Automotive Products, Inc., Chicago, Ill.
Meyer Body Co., Buffalo, N. Y.
Mifflinburg Body Co., Mifflinburg, Pa.
National Steel Products Co., Kansas City, Mo.
Omaha Standard Body Corp., Council Bluffs, Iowa.
Procter-Keefe Body Co., Detroit, Mich.
Quaker City Iron Works, Philadelphia, Pa.
Rex-Watson Corp., Canastota, N. Y.
Schaefer Bodies, Inc., Cleveland, Ohio.
Standard Steel Works, Kansas City, Mo.
Trailer Co. of America, Cincinnati, Ohio.
Transportation Engineers, Inc., Detroit, Mich.
Walker Vehicle Co., Chicago, Ill.
Wayne Works, Richmond, Ind.
Weibilt Body Co., Los Angeles, Calif.
Weidmech Steel Products Co., Hattiesburg, Miss.
Wentworth & Irwin, Portland, Ore.
York-Hoover Body Corp., York, Pa.



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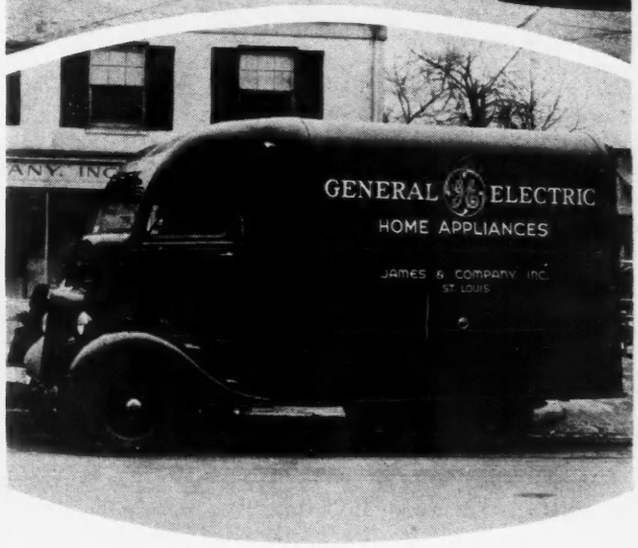


1—Budd built and designed for Hanscom Bake Shop, N. Y. Handsome body is of special stainless steel 13½ ft. long, 10 ft. high and 84 in. wide outside. Interior is Dry-Zero insulated (roofs and sides) and floors are oak. Walls are plywood lined. Chassis is Autocar Model UD, 127-in. wheelbase. Hanscom's name is cut from stainless steel and screwed to the body in relief. 2—Six Wheels, Inc., converted this Ford Chassis to third axle operation for Lyon Van & Storage. This Lyon roams over the entire Pacific coast. 3—Meyer Body Co. built this job of aluminum alloy for Schmick Ice Cream. Body weighs 1,850 lb. and has average capacity of 500 gal. Refrigeration is by Meyer patented Frigid-Fin refrigeration adaptable for ice, salt or dry ice. Chassis is a Stewart. 4—Transportation Engineers converted this Ford into a camel-back model for James & Co. The Dearborn de luxe job is 12 ft. long, providing large loading space on a 131½-in. wheelbase. 5—Herman Body Co. built this body for 7-Up Bottling Co., for 70 cases of beer.

(Turn to Page 70, Please)

5.

Sparkling Trucks

"LIKE women, the better looking the truck, the more attention it attracts. Beautiful bodies, attractive lines and colorful finishes catch the public eye whether the object be a lightweight beauty or a heavyweight truck," wrote Clinton Brettell in an article in COMMERCIAL CAR JOURNAL, in discussing the value of truck appearance. This is just one fleet operator's way of saying that beauty is not confined to creatures of the gentler sex. It's just as smart for fleetmen to keep their trucks looking spiffy as it is for women to powder their noses. And it is quite as essential, as was pointed out by John Wanamaker's fleet management in the statement: "The washing and cleaning of Wanamaker's trucks is not considered a mere incidental to operation, but as something of first importance, because trucks go about contacting thousands of customers as the store's representatives performing the last detail of every sales transaction."

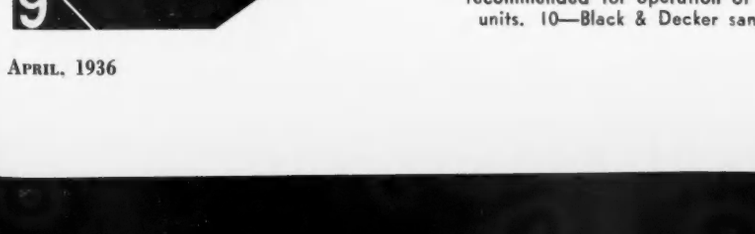
The line of operators who have expressed their appreciation of the value of good truck appearance is a long one. C. E. Teller once wrote: "Appearance! That is the story in one word that justifies our washing and painting program. There is also an economical motive for maintaining an appearance program, but economy plays second fiddle. Our trucks have to look right and it is to this demand for appearance that washings are geared."

In all cases, in order for these operators to obtain good truck appearance, it was necessary to have certain types of shop equipment such as sand-blast cleaners, spray guns, spray booths, air compressors, car washing equipment, etc. Poor shop equipment or a lack of such equipment results in inefficiency and is uneconomical.

When Egbert Jacobson wrote in COMMERCIAL CAR JOURNAL that "many operators conscious of the value of a

1—Globe Simplex High pressure washer with single cylinder, double acting pump is equipped for rapid washing with a two-gun spray. 2—DeVilbiss spray gun and pressure tank especially suitable for synthetic enamels. 3—Bink's Thor two-gun spray does an even, economical paint job. 4—Worthington two-stage compressor with newly designed silencer which eliminates noise and vibration. 5—Albertson electric polisher for a fast, bright shine

Are Business Gems



6 — Model C-2 Roto-washer with two-gun nozzle instantly adjustable to a cutting stream for "under-chassis" cleaning. 7—Curtis washer equipped with a 5-hp. compressor unit may be used for all washing and cleaning purposes. 8—Clark Tu-Spede sander and polisher changes operations by the throwing of a switch. 9—Champion two-stage compressor recommended for operation of multiple air units. 10—Black & Decker sander

Equipment Makers Who Cater to Truck Beauty

KEY: ac—air compressors; ps—paint spray equipment; cw—car washing equipment; br—body repair equipment; s & p—sander & polisher.

Albertson & Co., Sioux City, Iowa (br, s & p)
American Chain Co., Manley Mfg. Div., Bridgeport, Conn. (ac, cw)
Bean, John, Mfg. Co., Lansing, Mich. (cw)
Beaurline Fountain Brush Co., Chicago, Ill. (cw)
Binks Mfg. Co., Chicago, Ill. (ac, ps)
Blackhawk Mfg. Co., Milwaukee, Wis. (br)
Brunner Mfg. Co., Utica, N. Y. (ac)
Champion Pneumatic Machinery Co., Chicago, Ill. (ac, cw)
Clark, Jas. Electric Co., Louisville, Ky. (s & p)
Curtis Pneumatic Machinery Co., St. Louis, Mo. (ac, cw)
De Vilbiss Co., Toledo, Ohio (ac, ps)
Globe Mfg. Co., Battle Creek, Mich. (ac, cw)
Hansen Mfg. Co., Cleveland, Ohio (s & p)
Hardie Mfg. Co., Hudson, Mich. (cw)
Hobart Bros. Co., Troy, Ohio. (ac)
Homestead Valve Mfg. Co., Coraopolis, Pa. (cw)
Ingersoll-Rand Co., Phillipsburg, N. J. (ac)
Kellogg Compressor & Mfg. Co., Rochester, N. Y. (ac)
Paasche Airbrush Co., Chicago, Ill. (ps)
Rotawasher Corp., Cleveland, Ohio (cw)
Sterling Products Co., Detroit, Mich. (ac)
United States Air Compressor Co., Cleveland, Ohio. (ac, cw)
Weaver Mfg. Co., Springfield, Ill. (cw)
Worthington Pump & Machinery Co., Harrison, N. J. (ac, cw)

Reference Articles

Let There Be Light On Trucks At Night—Oct., 1934, p. 26.
Wanamaker Spic and Span—Jan., 1935, p. 34.
Trucks Can Be Modernized—Jan., 1936, p. 33.
Synthetic Enamels Give Magic Results—Oct., 1934, p. 32.
Washday Hints From Fastidious Fleets—Aug., 1935, p. 17.
General Baking Saves Dough With Synthetic Enamel—Dec., 1934, p. 19.

truck as an advertising medium are making every possible effort to make their trucks conform to modern ideas of design," he was sounding a prelude to painting as the first of two major functions that contribute to good truck appearance. (The second function is the washing process which is discussed further on.) Truck painting entered a

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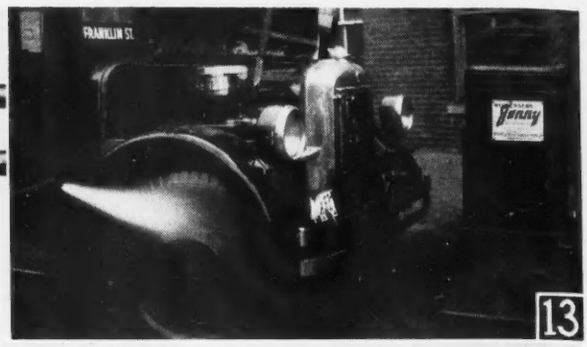

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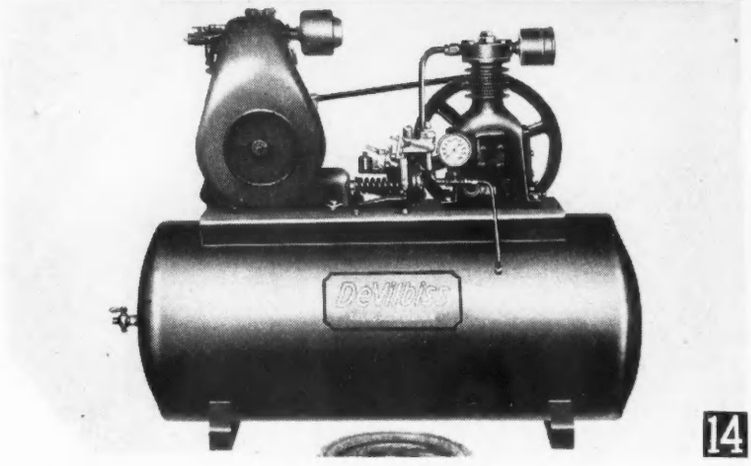

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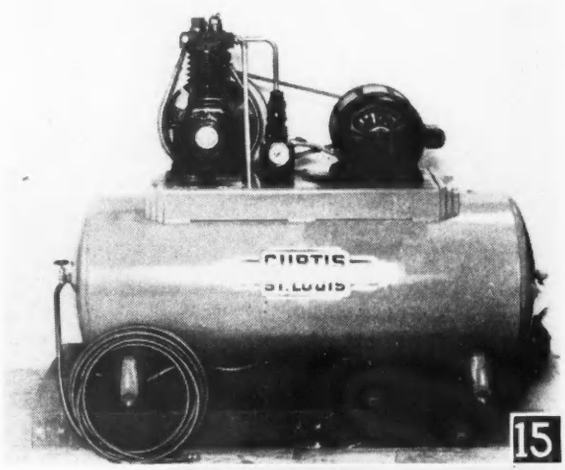
11—Beaurline fountain type brush shoots a fast stream to clean and wash in one operation. 12—Sioux solder spray-gun makes it possible to do a rapid repair job with cold spray. 13—Portable hy-pressure Jenny will do a complete cleaning job from chemical spray to rinsing. 14—DeVilbiss gas engine compressor for use where electricity is not available. 15—Curtis automatic compressor has improved air cooling feature. 16—Champion type H one-gun washer supplies sufficient water at 300 lb. pressure to wash a truck quickly and thoroughly



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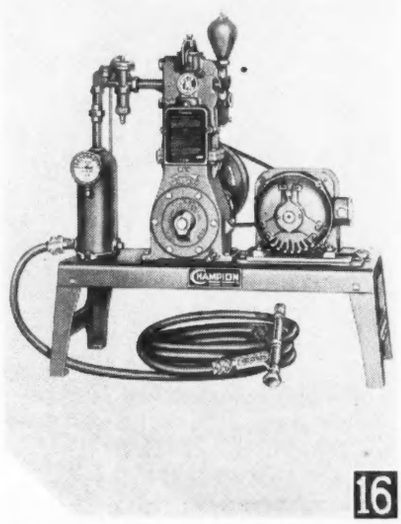

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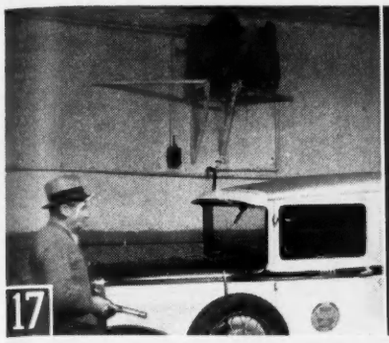
new era with the introduction of synthetic enamels. Here was a durable, elastic finishing material that retained a gloss without polishing or waxing and didn't lose its gloss from washings during the life of the finish. Synthetic enamels promised great things to operators who took to it the way they take to fried chicken.

But due to the lack of familiarity with the new material, wrong primers were used or the right primers were used incorrectly. The enamel did not spray on or dry properly due to unfavorable room temperatures or weather conditions. Not until operators strictly followed manufacturers' recommendations and exchanged ideas among themselves over the handling of the material were the beautiful and satisfactory results obtained.

One difficulty was with peeling. A. J. Chronister hit the difficulty on the head when he wrote in COMMERCIAL CAR JOURNAL: "Frequently, peeling is due to the continued action of paint stripper used in removing the old finish. The difficulty here is that after its use, the surface of the metal isn't washed completely and the stripping material acts on the new paint."

Another difficulty had to do with room temperatures and weather conditions. Gottlieb Roll, who wrote on this subject in COMMERCIAL CAR JOURNAL, said: "In building up a good finish, it is important that the room temperature be about 72 deg. If the weather is clear, so much the better. Very damp weather is not conducive to good painting conditions." Operator Roll also explained how he handles the spray gun to eliminate any possible difficulty from that angle. "When using the modern spray gun, I first spray a mist coat of synthetic enamel horizontally on the panel while standing about 12 in. away. The second and finishing coats are applied with the spray nozzle held 6 in. away." This method proved to be one shopman's public secret and is just one of the problems on truck appearance discussed by fleetmen in COMMERCIAL CAR JOURNAL.

The second major process that contributes to appearance is washing. Without a washing program, appearance would be a washout. So would the company operating the unwashed fleet in so far as public approval is concerned. The United Parcel Service realizes this fact and its fleet of 1400 trucks is washed daily without fail. "At no time shall a dirty truck leave our garage," says W. D. Bixby in COMMERCIAL CAR JOURNAL. John Wanamaker feels that "the attention and expense given to upkeep and appearance of the Wanamaker fleet are justifiable in the inter-



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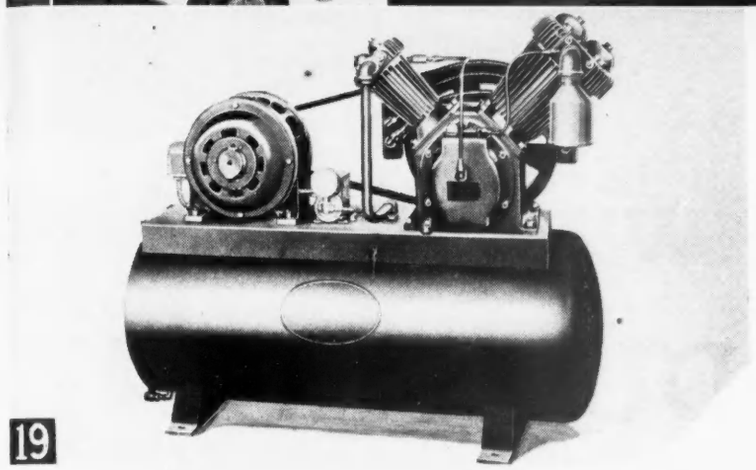

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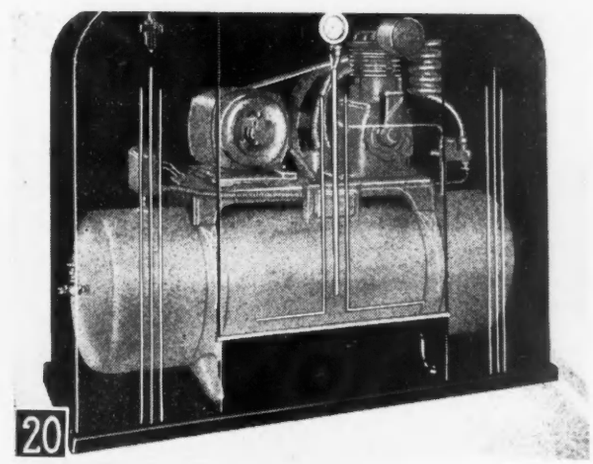

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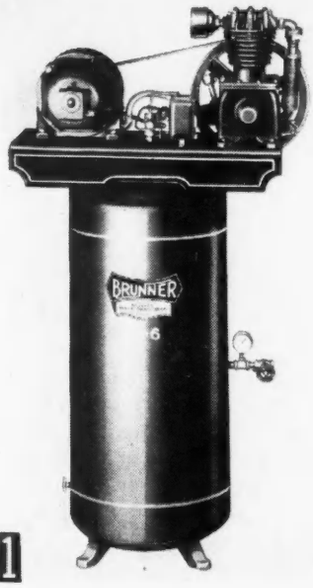
17—Manley car washers are available in sizes to displace 4.2, 6.4 and 13.2 gal. per minute. 18—Hansen No. 37 sand blast cleaner quickly removes old paint, rust, etc., from any kind of surface. 19—Ingersoll-Rand type 30, two-stage compressor has deep radiating fins. 20—Kellogg two-stage compressor Model 33-E comes in special insulated compressor cabinet. 21—Brunner V-6, single stage compressor sufficient for operating tire pumping service, two grease guns, lift and other air tools

How To Select a Compressor

The following chart may be used as a guide in selecting the capacity of a compressor. If maximum working pressure required is above 150 lb. a two-stage unit is recommended. Below that, a single-stage unit will suffice. By taking the total in cu. ft. of any or all of the equipment listed, it is possible to determine the size of a compressor needed.

	Cu. Ft. of Air Per Minute
Air operated garage doors	2-3
Air hammer (garage type)	12-25
Air lift grease rack	2-6
Blow gun for cleaning engine	3-7
Car washer nozzles (intermittent use)	2
Car washer nozzles (frequent use)	4-16
Brake tester	2½-5
Grease guns	1-4
Gas or oil pump-piston or pressure type	1
Oil spray guns (motor cleaning)	6
Paint spray gun	2-10
Spring oiling guns	3-7
Spark plug testers	½
Tire changers and spreaders	1
Tire inflation (per tire line)	1½



21

est of maintaining the traditions of the store for the rendering of a service to the public."

Thus fleetmen are fortunate in being able to count upon the aid of washing equipment manufacturers in their battle for fleet beauty. Some of this useful equipment ranges from a simple fountain-type brush that's really the nuts for use in washing, to high-pressure washers and air-compressor units.

The high-pressure washer is distinctively a modern innovation and it is designed to make trucks come clean. It is a tribute to this equipment that it has not failed fleets. Once subjected to the high-pressure wash, trucks come out of it beaming brightly. Here is where the appearance factor is in its element.

Some improvements in washing equipment may be listed as: improved atomizer, automatic nozzle control, adjustable pressure control, economy, efficiency, etc. These are the obvious improvements. There are many other types of efficient washing units and each boasts a long line of improvements.

A unit that clamors for recognition as a useful beautician's tool is the sand-blast cleaner and polisher. Such a unit fills a need in the paint and repair shop for the removal of paint, rust, for smoothing out surfaces, etc. One such unit may be used in combinations—as a liquid spray or air-blow gun. On the whole, sanding and polishing equipment born to serve the cause

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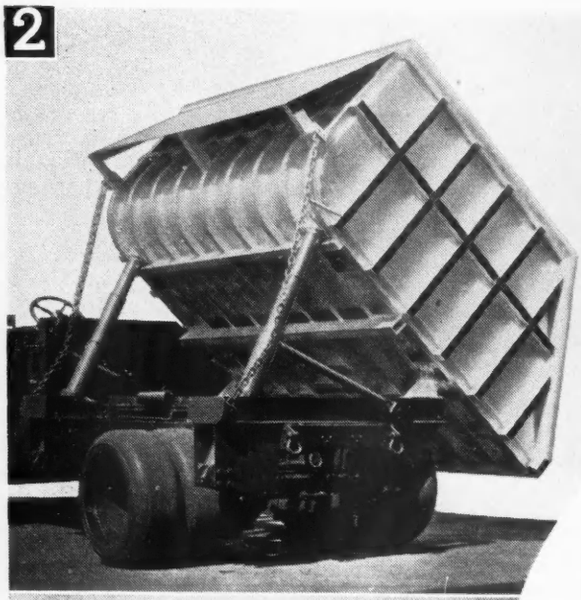


When There's DUMPING To Be Done...

So great has been the contribution of the combination of dump body and hoist to the transportation and construction industries that even Flo Ziegfeld would be taxed to do these units full justice in the glorification of their services to operators.

The principle of the dump body is simple enough. This unit is designed to remove itself from under a load of boulders, bricks or building materials as quickly and efficiently as possible with the least effort. The original dumping process of the dump body was rearward. But with the improvement of hoists it became possible to design bodies to dump sideways as well as rearward. Then followed the three-way dump, permitting the ejecting process to be carried on from either side of the truck or rearward as circumstances demanded. A fourth development in dump bodies is the moving floor unit in which the body remains stationary but the floor (usually a canvas covering on rollers) moves to eject part or all of the load.

THE function of the dump body may be applied to a variety of operations. City authorities and sanitary officials appreciate the superiority of the dump body in refuse collection and disposal and the use of this unit for such purposes is generally accepted.

Many improvements in design have

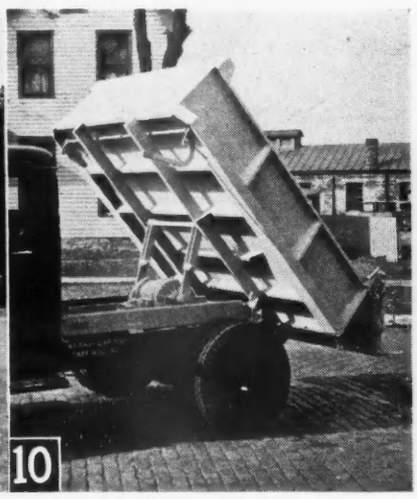
1—Easton Car's "Loryflor" dump body has a movable floor consisting of a canvas on rollers. 2—Gar Wood side dump developed for handling rock; two T-14 telescopic hoists provide high dumping angle. 3—Low loading Hercules Steel hydraulic dump body for 157-in. wheelbase truck. 4—A full 77 deg. dumping angle is possible with the St. Paul Model 66 hoist. 5—The Anthony vertical hoist with built-in automatic shaker fits between cab and body. 6—Steel roll top dump body by Perfection Steel for refuse collection. 7—Heil-built jack-knife high lifting hoist. 8—Kewanee type 6-S hydraulic hoist has a high dumping angle. 9—Fitz-Gibbon & Crisp rear dump body with vertical telescopic hydraulic hoist. 10—Burch Hydrometer hoist with two-way balanced power eliminates gears and oil lines

DUMP BODIES and HOISTS
Special Truck Equipment

MANUFACTURERS

Anthony Co., Streator, Ill.
Burch Corp., Crestline, Ohio.
Commercial Shearing & Stamping Co., Youngstown, Ohio.
Differential Steel Car Co., Findlay, Ohio.
Easton Car & Construction Co., Easton, Pa.
Fitz Gibbon & Crisp, Inc., Trenton, N. J.
Galion Allsteel Body Co., Galion, Ohio.
Gar Wood Industries, Inc., Detroit, Mich.
Heil Co., Milwaukee, Wis.
Hercules Body Co., Evansville, Ind.
Hercules Steel Body Co., Galion, Ohio.
Hughes-Keenan Co., Mansfield, Ohio.
Kewanee Mfg. Co., Kewanee, Ill.
Little Giant Products, Inc., Peoria, Ill.
Marion Steel Body Co., Marion, Ohio.
National Steel Products Co., Kansas City, Mo.
Perfection Steel Body Co., Galion, Ohio.
St. Paul Hydraulic Hoist Co., St. Paul, Minn.

... Modern Bodies of Lighter Metals and More Strength Permit Greater Payload and Profit; Ease and Speed Featured In Improved Hoists



been made during the last several years. First in line, in so far as the refuse collection and disposal body is concerned, is the construction of this unit with roller-type doors or covers. These are of the steel roll-top desk type operating individually in sections. The standard refuse dump body is equipped with two doors on each side and a built-in loading gate in the rear. Average normal capacity is 4 cu. yd. Some of the larger garbage and rubbish dump bodies are tarpaulin covered and are constructed with hinged steel extensions on the sides for full loads.

The greater percentage of dump bodies in use are of the conventional type designed for rugged construction work rather than for the very specialized uses. They may be seen in service in road building, housing construction and all types of excavation work. In this field the dump body is in its element, hauling dirt, building materials, etc.

Perhaps the latest development in dump bodies is their use as semi-trailers, permitting operators unusually large loads heretofore not realized. Coal operators have put the semi-trailer to work hauling as much as 10 tons on scheduled trips between mine and dealer's tipple. The efficiency of the semi-trailer dump may be realized from the statement of one coal operator who said that "the 1½-ton power unit with a 10-cu. yd. semi-trailer dump has saved me $600 in initial investment and 11.3 cents per ton-mile in operation due to a pull on the average of an 8½-ton payload as against an average haul of 6 tons with other equipment. The fact that the maneuverability of the semi-trailer is simple and that such a unit permits correct distribution of load on tractor and trailer axles, together with low height from ground to body top, make me think that such a unit has been the best buy I have made in a long time."

Semi-trailer dumps have been designed to haul easily 25,000 lb., or more than twice their weight, of the light-construction materials being used today. An additional feature of semi-trailer dump bodies is the drop-bottom doors available on some types of units, thus adding a fifth dumping direction

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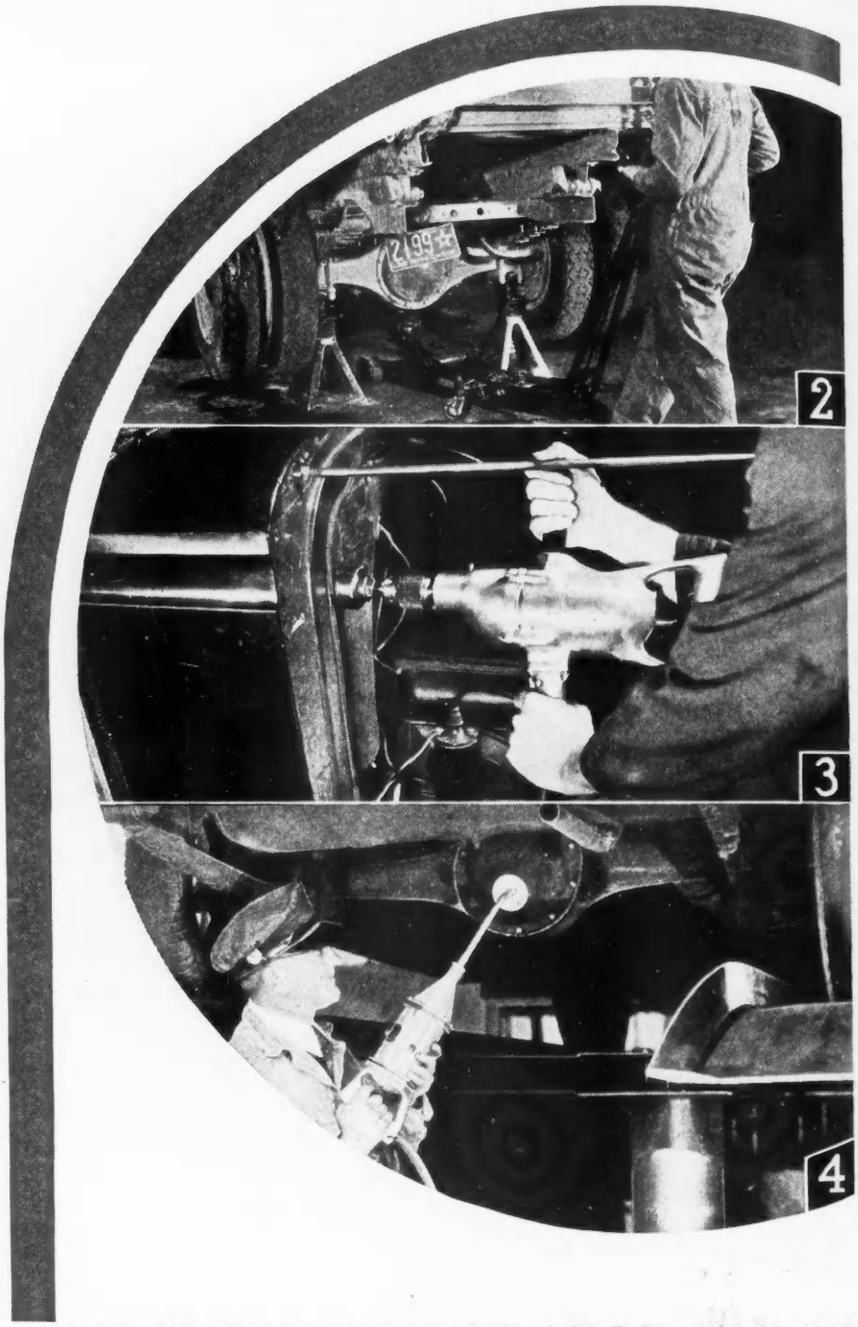
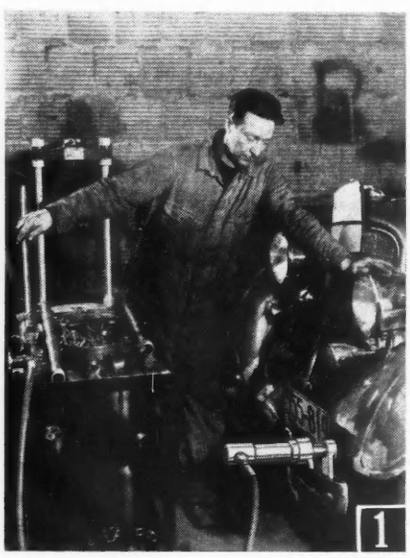


NO FLEET SERVICE SHOP CAN BE Universal

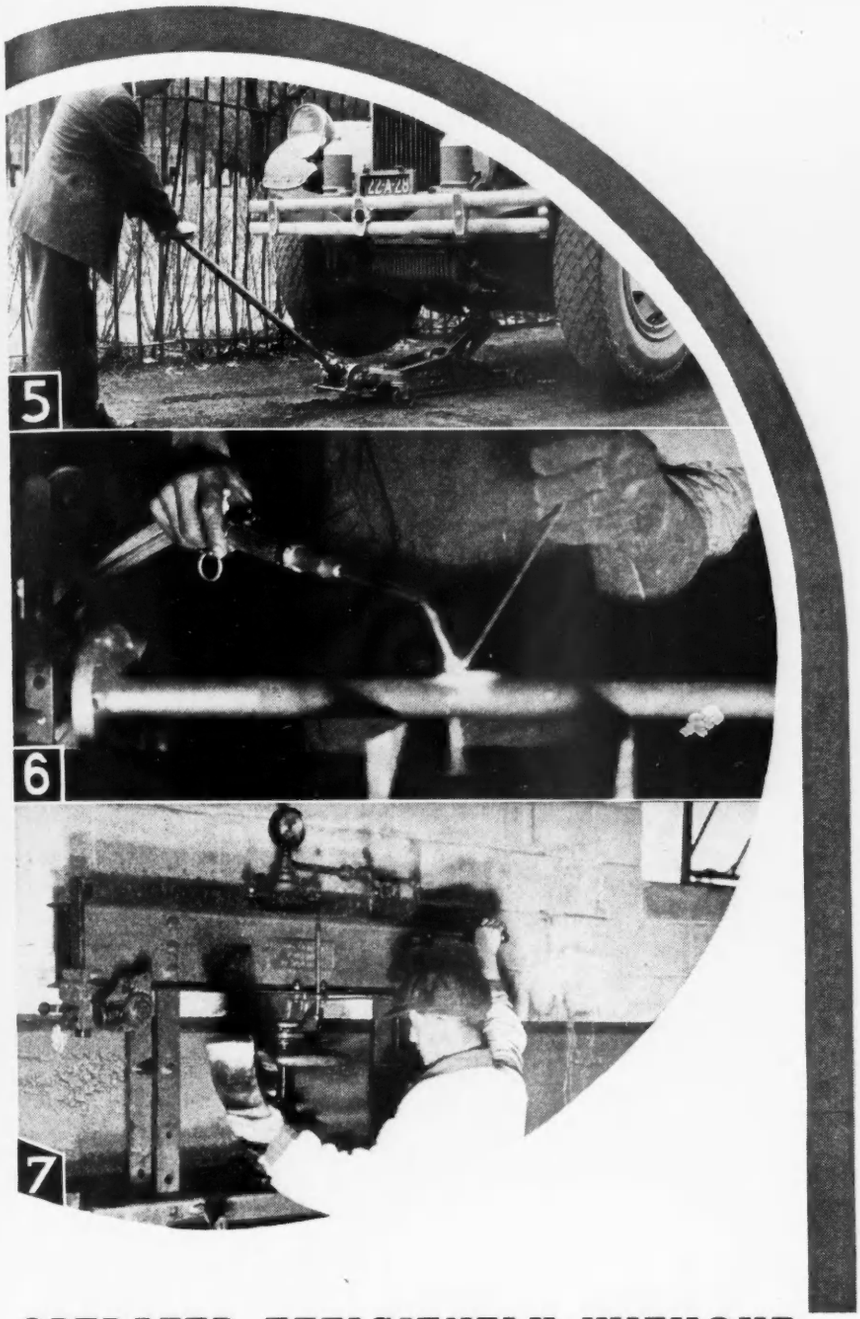
THERE are some types of shop equipment that some fleet operators, particularly the small ones, seem to be able to get along without. Then there is another type of equipment that no fleet operator can get along without if he operates his own shop. However, a great many of them do try to get along without the type of equipment that is necessary for any kind of shop operation without realizing the extent of the handicap they are imposing upon the shop personnel.

The type of equipment that is necessary for any kind of a shop consists of welding equipment, jacks, car horses, drills, arbor presses, vises, and other equipment that the mechanic needs for almost any kind of a job he attempts to do. Without them a mechanic is helpless to do the kind of work that the fleet operator expects.

JUST what the reason for attempting to operate a shop without this kind of equipment is remains a mystery. Take the arbor press for example. A recent shop equipment survey by COMMERCIAL CAR JOURNAL shows that only 38 fleets of 104 which participated have arbor presses in their shops. This leaves one to wonder what the other 66 fleets do when it comes time to press a sleeve out or off of some part; how they rivet ring gears to differential housings; how they they remove anti-friction bearings from shafts; how they remove or install all press-fit parts such as hubs; in short, how they do all the jobs that the 38 fleets do with their arbor presses? For the simple operation of replacing a broken axle shaft of a semi-floating axle an arbor press is needed. If one is not available the mechanic must either spend hours driving the wheel bearings off with a hammer and screwdriver only to be rewarded in many cases by finding that he has ruined the bearings when he gets them off. The alternative is to take the broken shaft to the nearest machine shop which usually takes a great deal more time than it does to do the job. The machine shop will press the bearings off the old shaft and on the new one, but besides the loss of time in getting there and getting the job scheduled and done, the machine shop demands a fee of approximately $1 for the job.



THE same survey shows that while 90 of 104 fleets have garage jacks, only 56 of them have car horses or trestles. Lifting a truck and then keeping it in the raised position securely and safely is not a job that can be farmed out, so it must be done with some type of equipment in the fleet shop. Thus we



Fleet Buyers' Guide

KEY: d—drills; ap—arbor presses; w—welding equipment; gj—garage jacks; v—vises; eh—electric heaters.

Air Reduction Sales Co., New York City (w)
Ajax Auto Parts Co., Racine, Wis. (gj)
Albertson & Co., Sioux City, Iowa (d)
American Chain Co., Manley Mfg. Div., Bridgeport, Conn. (ap, gj, v)
Bastian-Blessing Co., Chicago, Ill. (w)
Bendix Products Corp., South Bend, Ind. (ap)
Black & Decker Co., Towson, Md. (d)
Blackhawk Mfg. Co., Milwaukee, Wis. (gj)
Columbian Vise & Mfg. Co., Cleveland, Ohio (v)
Imperial Brass Mfg. Co., Chicago, Ill. (w)
Joyce-Cridland Co., Dayton, Ohio (gj)
Lempco Products, Inc., Bedford, Ohio (ap)
Lincoln Electric Co., Cleveland, Ohio (w)
Linde Air Products Co., New York City (w)
Simmons Mfg. Co., Cleveland, Ohio (gj)
Stanley Electric Tool Div., Stanley Works, New Britain, Conn. (d, v)
Storm Mfg. Co., Minneapolis, Minn. (ap)
Torchweld Equipment Co., Chicago, Ill. (w)
United States Electrical Tool Co., Cincinnati, Ohio (d)
Van Dorn Electric Tool Co., Towson, Md. (d, eh)
Walker Mfg. Co., Racine, Wis. (gj)
Weaver Mfg. Co., Springfield, Ill. (ap, gj)

1. Blackhawk Porto-Power jack applies power in any direction for any type of job. 2. Walker hydraulic jack makes lifting heavy trucks a cinch. 3. Wood and metal are no obstacles to Black & Decker drills. 4. Van Dorn electric gun heats stiff grease in a few minutes. 5. Simmons hydraulic garage floor jack has 17-in. lift and 5-ton capacity. 6. Linde Prest-O-Weld blow pipe fusion welding shaft with high-test welding rod. 7. Bumpers, axles, rods, etc., give way under th's 40-ton Manley press. 8. This all-purpose press by Weaver handles the toughest job.

OPERATED EFFICIENTLY WITHOUT

Equipment

find that in some fleet shops the mechanics are still blocking vehicles up to work on with whatever kind of makeshift material is handy. This practice besides being very uneconomical is decidedly dangerous and it is fair to say that any fleet operator who permits mechanics to work under vehicles supported by scrap material is not discharging his duty either to himself or to his mechanics. Most good mechanics are too smart to work under a vehicle that is blocked up in such a way that it may give them a chance to try their hand at holding it up before they get out from under it.

Many shops start out with an adequate complement of garage jacks and car horses but with constant use these pieces of equipment wear out. Failure to replace this equipment is just as

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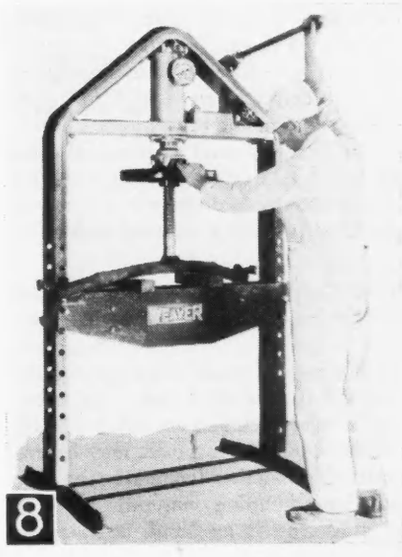
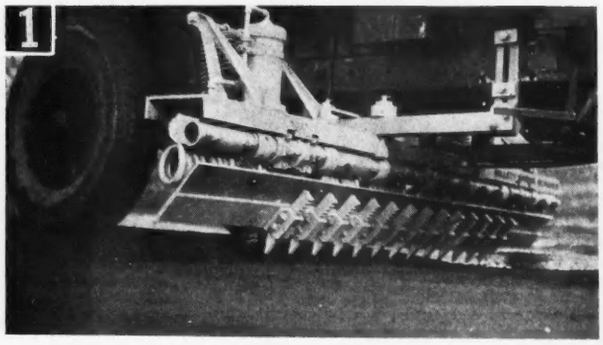
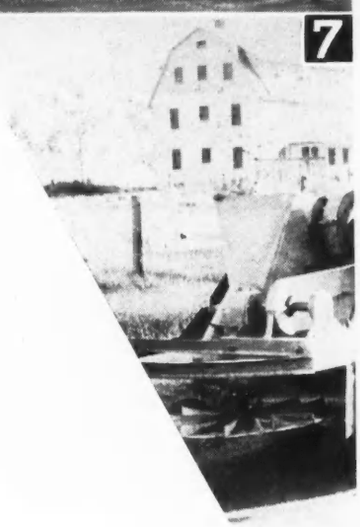




1—Willett scarifier mounted on the Willett spring scraper cuts ice ruts quickly. 2—Walter reversible blade type snow plow for medium heavy snow falls. A sand spreader is mounted in the body. 3—Good Roads V plow slopes the sides of cut. High-lift wings may be adjusted to any height or angle

Equipment Paves the

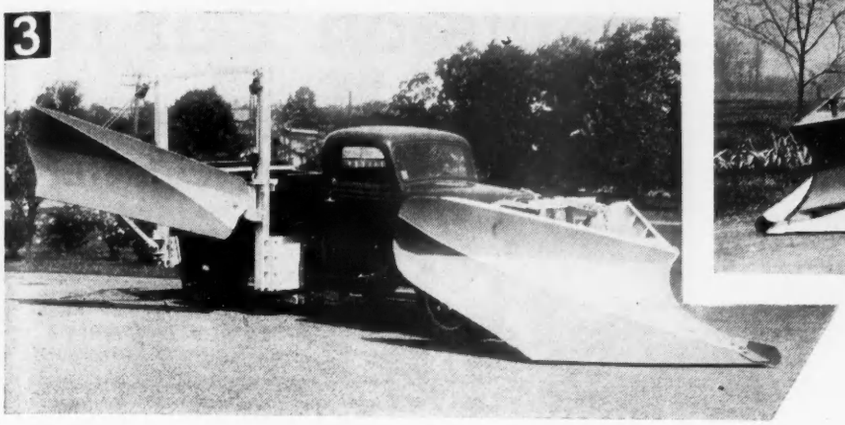


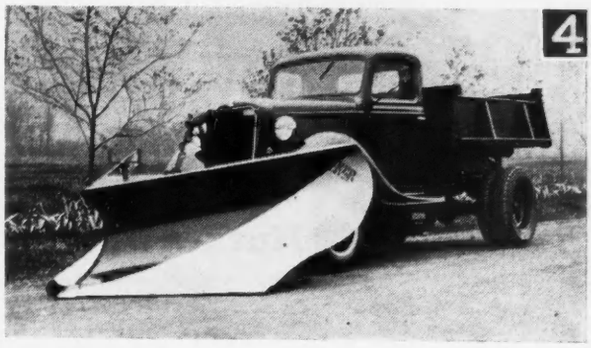
THE building of good roads will never cease in the United States. Hundreds of thousands of miles have been built and hundreds of thousands of miles will be built in the future. This means the expenditure of billions. The Emergency Relief Appropriation Act of 1935 alone has put $145,000,000 in the good roads kitty for immediate use. Fifty-one millions are being spent on 3751 miles of roads now under construction, and another 46 millions will be spent on 3737 miles of roads when construction has been approved. You may be sure that the balance of 94 millions will be similarly spent this year.

It's a safe estimate that at the moment there are more than 400,000 miles of improved highways, including connecting municipal streets, in the United States. These require a high order of maintenance to preserve the investment and to keep down the cost of operating vehicles over them. It's also a fact that the Federal highway system is only 50 per cent complete. In view of this, just double the amount of vehicles now in use for highway maintenance and you will only begin to realize the potential field for the use and operation of motor equipment for highway maintenance.

NOT only in maintenance, but in road construction as well, motor equipment has played an important part. And methods of road construction have come a long way after the introduction of this equipment. The value of the road spreader, for instance, may be appreciated when we compare the old method of dumping materials in piles and scattering it by hand, against the new method whereby the material is unloaded and spread in about the same time necessary for unloading in stockpiles. This mechanical spreader saves time, material and labor. A recent development in the spreader is a gate that controls the flow of material to a predetermined thickness.

Another type of motorized unit used in road construction is the bituminous paver used for the spreading and laying of black top materials. Materials are mixed at a central plant and then dumped into a dump body truck and driven to the job, where the material is dumped into the receiving box of the paver. (The function of the dump body truck will be discussed in another article in this issue.) A paver can lay 1500 tons of paving material daily in the construction of primary roads. In the construction of concrete roads, however, the concrete mixer truck becomes indispensable. A concrete mixer carries from 5 to 7½ cu. yd. of material which, as everyone knows, is agitated in transit. These trucks are equipped





4—Marmon-Herrington V plow cuts a wide, clean path. 5—FWD hydraulic-operated 10-ft. scraper blade ideal for leveling-off operations. 6—Jaeger truck transit mixer helps reduce time and labor in concrete road construction. 7—Universal sand and gravel spreader for road maintenance

Way To Good Roads

Special Truck Equipment

with a separate engine drive or can be obtained with a gear box for securing power through a power take-off by means of which any portable unit may be operated. A recent development in the concrete mixer unit is the two-speed transmission for varying the r.p.m. of the mixer drum. Other improvements have been the elimination of dead weight in the larger type drums, thus improving the efficiency of the truck and permitting the operator to carry greater payloads.

Successful concrete operators today are those with the vision to expand their service to road building contractors, which has become possible since the introduction of the portable mixer and agitator. With such units the concrete operator is able to split units up quickly to other sections of job or to different jobs or to take care of other small concrete requirements as part of a service rendered to a contractor.

ONCE the road is built there still remains the vital and important problem of maintaining it, that is, keeping it in repair and keeping it open to traffic. In the maintenance operation is where truck equipment plays its greatest role. From the concrete job of concrete road building, truck equipment moves on to keep that road in repair with such equipment as the sweeper, planer, flusher, snow plow, etc. The planer is

(TURN TO PAGE 100, PLEASE)

The Road to Good Roads Equipment

KEY: a—snow plows; b—flushers; c—sweepers; d—oil, tar and bituminous spreaders; e—scrapers; f—fan and chip spreaders; g—concrete mixers; h—planers.

Anthony Co., Streator, Ill. (a)
Baker Mfg. Co., Springfield, Ill. (a)
Burch Corp., Crestline, Ohio. (a)
Chain Belt Co., Milwaukee, Wis. (g)
Detroit Harvester Co., Detroit, Mich. (c)
Elgin Sweeper Co., Elgin, Ill. (c)
Etnyre, E. D., Co., Oregon, Ill. (b, d)
Four Wheel Drive Auto Co., Clintonville, Wis. (a, e)
Good Roads Machinery Co., Kennett Square, Pa. (a, d, f)
Heil Co., Milwaukee, Wis. (a)
Hercules Steel Products Co., Galion, Ohio. (f)
Jaeger Machine Co., Columbus, Ohio. (g)
Lee Transit Mixer Co., Indianapolis, Ind. (g)
Municipal Supply Co., South Bend, Ind. (b)
Pneu-Hydro Machinery Co., Cadillac, Mich. (h)
Portland Concrete Machine Co., Chicago, Ill. (g)
Rotary Snow Plow Co., Minneapolis, Minn. (a)
Transit Mixers, Inc., Dunellen, N. J. (g)
Universal Road Machinery Co., Kingston, N. Y. (f)
Walter Motor Truck Co., Ridgewood, Queens, L. I., N. Y.
Willett Mfg. Co., Grand Rapids, Mich. (a, e)

New Products on Parade

Descriptions of the Latest Items Put on the Truck Market by Equipment and Specialty Manufacturers

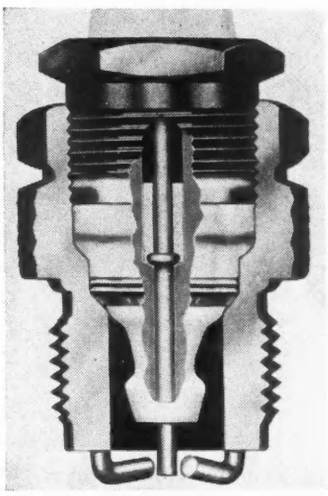
Hoyt Current Meter

THE Burton-Rogers Co., 755 Boylston St., Boston, Mass., is marketing the Hoyt starter current indicator which sells for $2. This meter is simply hooked over the starter cable, and when the switch is closed will indicate the amount of current drawn by the starter. There are no connections to make or leads to hook up.

Hoyt Starter current indicator

Spark Plug Seal

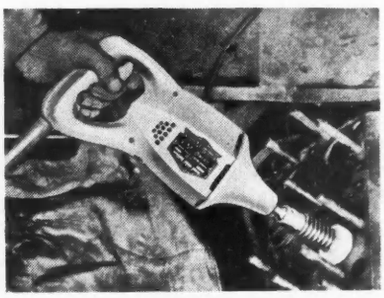
THE Champion Spark Plug Co., Toledo, Ohio, announces a new material used in sealing the center electrode in the bore of the insulator in Champion plugs. This dry powder cement, known as Sillment, is applied in small pinches at a time, being metered around the center electrode by an automatic machine. Under the pressure of tamping, the crystals interlock into a solid mass, providing a permanent gas-tight seal. Champion engineers claim a Sillmented plug will retain its original thermal rating or heat range throughout its life.



Champion spark plug sealer

B & D Valve Seat Grinder

THE Black & Decker Vibro-Centric equipment can be used to recondition all types of valve seats, cast iron, hard steel and stellite. With a high grinding speed of 12,000 r.p.m., it is said to be possible to finish a seat in a very short time, and the automatic vibrating action throws off the particles which would otherwise load up the grinding stones. A self-centering pilot is placed in the valve guide and the stone and arbor are slipped in place. The driving unit may be held at any angle if necessary to clear an obstruction.—Black & Decker Mfg. Co., Towson, Md.

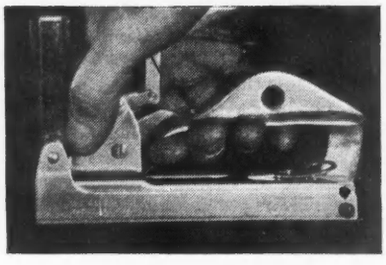


B & D grinder for valve seats

Kling-Tite Tacker

A. L. HANSEN MFG. CO., Chicago, has a new device known as the Kling-Tite automatic one-hand tacker, designed for various tacking jobs, such as fastening insulation on the frame work of refrigerator bodies, tacking covering materials on tops, floors, etc. By squeezing the handle the hammer is pressed against a spring, lifted a short distance and tripped, giving a trip-hammer action. A strip of 84 tackpoints is loaded into the channel of the machine. Tacks from this strip are fed into the throat of the machine and driven by the impact of the hammer into the object being tacked. Tacks up to ½ in. in length may be used.

Hansen automatic one-hand tacker



Wonder Weld

THE Miller Mfg. Co., 1100 Mt. Ephraim Ave., Camden, N. J., is marketing Wonder Weld for repairing cracked valve ports, water jackets and cylinder heads. It is introduced into the radiator after the water is warm, and the sealing of the cracks takes place when this liquid seeps through and comes in contact with the hot metal. Wonder Weld will not clog the radiator or cooling system, according to the maker.

Portable Grinder

THE new Stanley portable grinder is equipped with a ⅜-hp. motor having a speed of 18,000 r.p.m. This grinder, which is manufactured by The Stanley Electric Tool Division, The Stanley Works, New Britain, Conn., can be used for internal and external work, and is said to have ample power to drive a 1½ x ½-in. emery wheel and maintain a high grinding speed on the toughest work.

[Other Products Page 96]

Stanley portable grinder

HYDRAULIC BRAKING

keeps on making friends *and holding them* ... owners ... dealers ... builders

THE vast army of motor truck and bus operators who prefer hydraulic brakes could never have grown if they only *imagined* the advantages they enthusiastically praise. These owners *know* their hydraulic brakes are thoroughly—unquestionably—reliable; require very little attention; need no lubrication; provide an easy, gentle pedal.

Dealers know these things count enormously in repeat selling—and that passengers, friends of their customers, are impressed by fine brake performance.

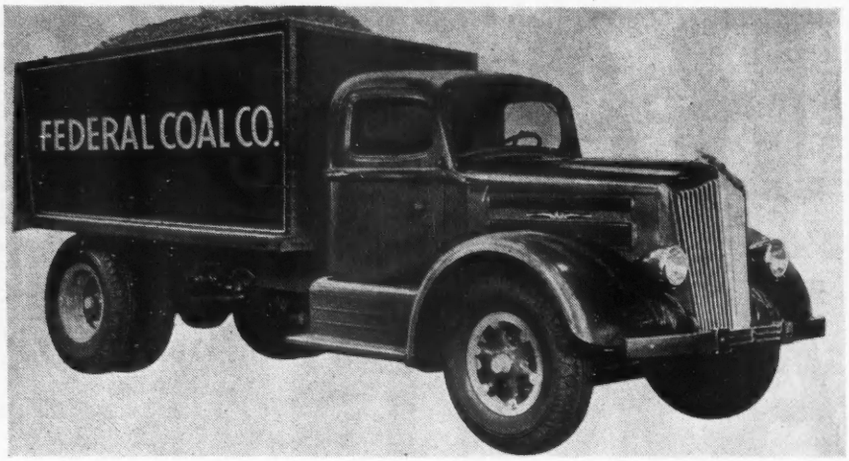
Builders — car manufacturers — are keenly aware of this pronounced public sentiment toward hydraulic braking.

Look at the list for 1936—the number and the character of the cars, trucks and buses now hydraulic-equipped.

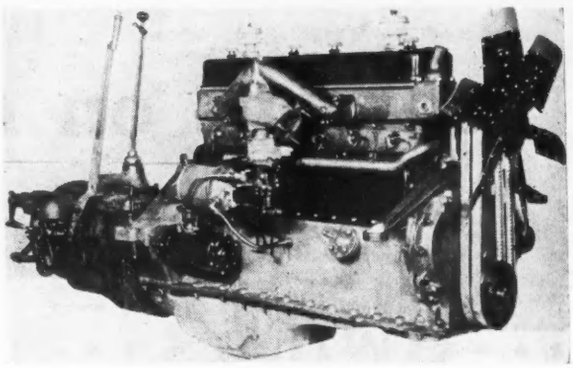
HYDRAULIC BRAKE COMPANY
DETROIT, MICHIGAN

LOCKHEED HYDRAULIC
Four BRAKES *Wheel*

OFFICIALLY SERVICED THROUGHOUT THE NATION BY WAGNER ELECTRIC CORPORATION



Left—White heavy-duty Model 722, 4 to 6-tons, looks smart in its new streamline dress



Below—New White-built, six-cylinder, 396-cu. in. engine is in the new heavy-duty streamlined models

White Modernizes

ITS ENTIRE HEAVY-DUTY LINE

Streamlining Extended to Models 712 and 718 in Intermediary Field and 720 and 722 In 3½ to 6-Ton Field; New 396-Cu. In. Engine

THE success of the three light-duty, first completely streamlined trucks announced by The White Motor Co. last fall has resulted in the company's streamlining and modernizing its entire line of intermediary and heavy-duty trucks. Two new heavy-duty truck models were also announced, the 720 and 722, in the 3½ to 6-ton fields. Models 712 and 718 have also been recently modernized and streamlined.

All White trucks now are streamlined along the lines styled by the Count Alexis de Sakhnoffsky and follow the general trend of the light-duty models. Not only do these new models have every modern refinement from the point of view of handling and driver comfort, including automatic ventilation, but they have modern mechanical and safety features throughout the engines and chassis that result in greater performance and economy. The standard chassis price for the Model 720, 3½ to 5-ton truck, is $4,175, while the Model 722, 4 to 6-ton job, is priced at $5,150. There is a Model 720T designed for tractor service at $4,175. The Model 712 is priced at $2,500 and the 718 at $2,990.

The wheelbases on the 720 and 722 models range from 134 in. with standard CA dimensions up to 212 in. In both, a White six-cylinder overhead valve engine is used with 396 cu. in., 4-in. bore by 5½-in. stroke, for the Model 720, and 460 cu. in., 4 5/16 by 5¼, for the Model 722. These engines are of a basic design already successfully employed during the last six years and offer excellent economy and unusual accessibility.

Furthermore, the set-back front axle gives an excellent body loading space combined with a short wheelbase, together with unusual maneuverability. Both engines use heat-treated, counterweighted, seven-bearing crankshafts with over 36 sq. in. of projected bearing area and employ steel-backed main bearings.

ALUMINUM pistons with full floating wrist pins are used and lubrication from the full-pressure system is carried to every working part in the engine. Special thrust cups are used in the valve mechanism to prolong valve and valve guide life and Stellite exhaust valve seats of the screwed-in, valve type are standard equipment.

A heavy-duty clutch of the White wet type is employed with automatic lubrication to the throwout bearing, and five-speed fourth direct transmissions with quiet gears are standard in both models. Optional five-speed fifth direct transmissions are available at no extra cost. These transmissions are White-designed, using alloy steel gears with White case-hardening and heat treatment.

Heavy-section, wide-tread front axles are used with cam-and-lever steering and extra large front wheel bearings are employed. Both 720 and 722 have the double reduction spiral bevel and herringbone gear axles of full-floating type with axle shafts fully ground, and also load carrying tubes are pressed into one-piece cast housings, a construction used by White for many years. The range of ratios for the Model 720 is 7.22, 7.95, and 8.73, and for the Model 722: 6.66, 7.74, 8.48, and 9.5.

The standard tire equipment for the 720 is 9.00/20 with a maximum oversize of 10.50/22 and in the case of the 722, standard tires are 9.75/20 with a maximum oversize of 11.25/22.

(TURN TO PAGE 144, PLEASE)

Chambersburg Branch of Capital Bakers consistent Exide users

ABOVE are shown seven of the fourteen modern trucks and delivery cars operated by the Chambersburg, Pa., Branch of Capital Bakers, who are widely known for their quality line of bread and cakes.

These Exide-equipped units are used for both urban and rural deliveries, over paved highways as well as rough mountain roads. The service is steady and tough, but this operator has found that Exides stay on the job through winter and summer temperatures, giving long, low-cost service, with a minimum of maintenance.

Like other prominent operators, Capital Bakers have found that a little systematic attention, with Exides, is repaid many times over by unusually long battery life, rock-bottom maintenance costs, and freedom from costly tie-ups. The reserve service built into an Exide enables it to respond to such treatment long after many batteries have out-lived their period of usefulness.

Exide Engineering Service, conducted by trained and experienced battery engineers, is available to fleet operators, free. Let this service, with Exide Batteries, cut your battery maintenance costs.

Exide
BATTERIES
FOR EVERY TYPE TRUCK

EXIDES FOR DIESEL STARTING

Specially constructed Exides of three different types have been developed for Diesel starting. Packing maximum power into minimum weight and space, these special Exides meet the low-temperature starting requirements of all high-speed Diesels.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

De luxe cab No. 66B redesigned for Models 40, 40DR and 50 is 66 in. wide

Federal Redesigns Heavy-Duty Models

Change In Weight Distribution On Models 40, 40DR and 50 Affected By Moving Engine, Radiator, Cowl and Cab Forward; Wheelbases From 135 To 219 In.

NEW transportation efficiency, new styling and numerous mechanical improvements are now offered in three new Federal heavy-duty models, 40, 40DR and 50, according to an announcement by the Federal Motor Truck Co. The nominal gross rating of models 40 and 40DR is 4 to 5 tons, with a total allowable weight of 20.000 lb. Model 50 has a nominal rating of 5 to 6 tons with total allowable weight of 24.000 lb. Prices are as follows: Model 40, $2590; model 40DR, $2715; model 50, $3195. Prices quoted are for standard 135 in. w.b. chassis, f.o.b. Detroit.

By moving the engine, radiator, cowl and cab forward, it has been possible to gain the important advantages of shorter wheelbase and shorter overall length without decreasing the loading space and without sacrificing accessibility of the powerplant and other units. In fact, with this new design, about half of the short length advantage of the cab-over-engine or "camelback" truck, has been gained.

In the new 40, 40DR and 50 models, the distance from the face of the front bumper to the rear of the cab is 1½ ft. less than on former corresponding models, giving an 18-in. shorter wheelbase and a 16-in. shorter overall length, with the same loading space. This makes possible a new short wheelbase length of 135 in. Other wheelbase lengths are from 145 in. to 219 in.

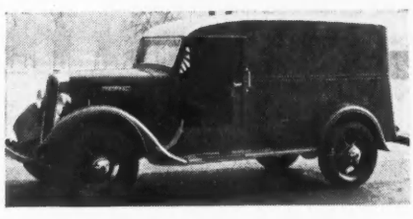
THE better load distribution gained by this new short design results in increased tire mileage, improved braking ability and easier steering. Other important advantages are shorter turning radius, easier maneuvering ability, and in states where there are overall length restrictions, longer trailers or bodies can be used. The frame size and spring suspension remain unchanged.

Width of front springs has been increased from 2½ in. to 3 in. Radius rods are provided as heretofore on the model 50. The 40, 40DR and 50 models are now equipped with Timken axles, front and rear. Rear axles are the full floating bevel type on the model 40, while the models 40DR and 50 have full floating double reduction drive axles. Service brakes are Lockheed four-wheel hydraulic front 16 in. diameter, 2¼ in. wide, rear 17¼ in. diameter, 4 in. wide, with the exception of the model 50, in which the rear brakes are 5 in. wide. These brakes are amplified by a vacuum type booster. The 14 in. Tru-Stop single shoe disc type emergency brake is retained on the 40 and 40DR models. The 135 in. wheelbase model 50 has a 16 in. single shoe Tru-Stop brake on the transmission and longer wheelbase lengths on this model have Tru-Stop 14 in. double shoe brakes on the center cross members. Dayton cast steel wheels are now standard on models 40, 40DR and 50.

THE 381 and 404 cu. in. six-cylinder Waukesha engines used in the previous models are continued with the improvement of downdraft carburetion which makes a more accessible engine, and a new velocity type governor. The W. C. Lipe non-shock loading clutch with vibration dampener is now used in all three models. The transmission is a Clark 5-speed type with direct drive on 5th speed. Both the 3rd and 4th speed gears are the silent helical type.

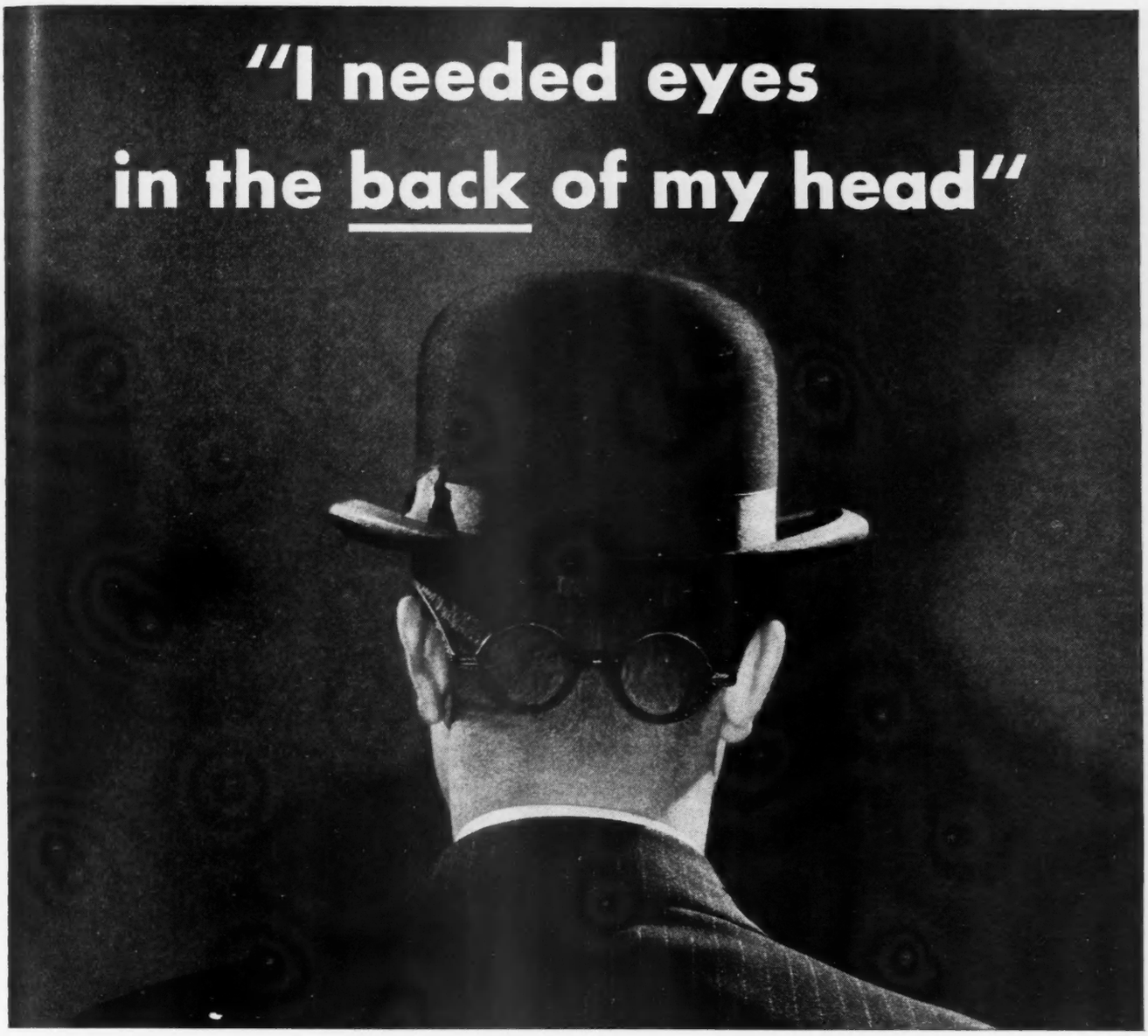
The styling of the new 40, 40DR and 50 models is very attractive. The shortened front end gives them a heavier looking appearance. Louvres of new modern design are mounted with three chrome-plated mouldings. Radiator shells, headlights and channel front bumper are chrome-plated. Large chrome-plated hub caps are furnished front and rear on models 40 and 40DR, and on the front wheels of model 50.

A big new de luxe cab is 66 in. wide, has a one-piece insulated stamped steel roof, V-type safety glass windshield with chrome-plated frames and dual wipers, plywood lining and insulated rubber floor mat.



Special milk delivery body built by Federal mounted on a 128-in. wheelbase truck. Capacity is 36 cases

"I needed eyes in the back of my head"



"I WAS like a man who bends over to pick up a pin in the street—only to get bumped by a truck.

"Except I got bumped by a whole fleet of trucks, *my* fleet.

"To save a few cents a gallon, I slapped *cheap oil* in the crankcases of my trucks... and thought I was saving money.

"Well, for every nickel I saved, I shelled out double. Carbon camped on my pistons like barnacles on a derelict ship. Sludge strangled my motors. The oil itself became thin as watered milk.

"When overhaul costs started piling in, I wished I'd had eyes in the *back* as well as the front of my head . . . and paid a few cents more for a better oil.

"I certainly cocked up my ears and listened when the Gulflube salesman came in. His story sold me, and I've been using Gulflube ever since. My maintenance costs have gone down and DOWN. I'm ready to climb right up on a soap box, and tell you how

"Gulflube can do the same for you!"

Gulflube is the best premium quality oil selling at non-premium prices. Gulf's exclusive Multi-sol process washes it clean of carbon, gum and sludge forming compounds. Gulflube thins out less under heat, flows freely at zero temperatures, and has remarkably high film strength.

It not only treats a motor better. It is consumed more slowly. And its high mileage has recently been stepped up another 20 or 25%! Get the complete money-saving story. Mail the coupon.

HERE'S AN OFFER THAT MEANS BIG MONEY TO YOU!

CCJ-46

GULF, 3800 Gulf Bldg., Pittsburgh, Pa.

Gentlemen:

I should like to get the complete money-saving story on Gulflube.

Name_____

Address_____

City_____ State_____

GULFLUBE MOTOR OIL

GULF

NEWS

"I.C.C. Not Arbitrary"—Eastman

The I.C.C. will never take any arbitrary stand in its enforcement of the Motor Carrier Act of 1935. Promise of that was given by Federal Coordinator of Transportation Joseph B. Eastman in a recent speech before over 400 members of the Cartage Exchange of Chicago. Mr. Eastman said that the commerce body has decided on a policy of "enforcement by consensus of opinions," and that instead of requiring members of the trucking industry to come to the commission, as is done in enforcement of railroads, the commission intends to go to the trucking industry through regional hearings on disputed matters.

Burke Sees 15% Increase

Volume of truck and commercial car sales in 1936 probably will show an appreciable gain over last year, according to J. D. Burke, director of truck sales, Dodge Division of Chrysler Corp.

Compilations of truck and commercial car registrations for 1935 reveal that 510,683 trucks and commercial cars were sold. Regarding the probable total for 1936, Mr. Burke thinks it reasonable to believe that a 15 per cent increase in sales of commercial vehicles may be seen.

Truck Equipment Appointments

L. R. Ruoff has been appointed manager of Truck Equipment Co.'s New York City branch. Malcolm Hale and P. R. Finch have opened the company's Chicago organization.

H. P. Arnold, of Buffalo, and J. P. Ashton, of Philadelphia, have both rejoined the organization, selling Truxmore third axles and semi-trailers.

Wilkening Ups Two

David Cowhig, comptroller of the Wilkening Manufacturing Co., has been appointed assistant treasurer. Herbert Brooks has been named credit manager.

Nevin Is Rockwell Gen. Mgr.

Thos. M. Nevin, formerly with Budd of Detroit, has been appointed general sales manager of Rockwell Products Co., Hartford.

Waukesha Continues Diesel School

Waukesha announces that it will continue its course of diesel instruction. The school is intended for the technical staffs of its clients and operators of Waukesha diesels. The course of lectures requires a week to 10 days for completion and is given free. Next class begins April 6.

Fitness Upped by Reo

R. J. Fitness has been appointed works manager and chief engineer for Reo Motor Car Co.

Road Chiefs Offer Safety Program

Declare War on Lunatic Fringe of Motorists with Six-Point Plan

Motor vehicle enforcement officers of 43 states, coordinated as the American Association of Motor Vehicle Administrators, have declared open warfare on what they term the lunatic fringe of motorists whom the association holds responsible as a primary cause of the highway traffic problem.

The association adopted a six-point program in the interest of safety which depends for its effectiveness on the cooperation of the individual states. It is:

1. Formation in each state of a state safety committee with the primary objective of securing support for and coordination between the administrative and enforcement bodies and the courts.
2. Uniform state laws and municipal ordinances brought about by the efforts of various coordinating bodies.
3. Standard operators' requirements with definite power of suspension and revocation and severe penalties for driving while a license is suspended.
4. Education of youth both before they are eligible to drive and during their early driving years.
5. Withdrawal of the fear appeal, with all future drives made along constructive lines.
6. An objective of the association—to offer by the end of the current year a definite uniform proposal acceptable to the general public. To this cause the association earnestly solicits the aid of all groups interested in the accident problem.

Burt F. Dunham who has been promoted to manager of Autocar's Detroit branch. He previously covered the Philadelphia suburban territory

ICC Closes Insurance Hearing

The Bureau of Motor Carrier's recommendation that insurance companies should have $1,000,000 capital in order to be eligible to accept insurance from truckers brought forth a storm of protest from truckers and trucking organizations and approval from 57 insurance stock companies. Hearings on the proposal were held in Washington last month.

[Additional News Page 50]

Autocar to Recapitalize; Sales Up

The Autocar Co. has formulated plans for recapitalization which calls for the raising of $300,000 of new capital by an issue of 10-year debentures. A part of the new capital will be used to make a 20 per cent payment on the first mortgage seven per cent bonds, outstanding in the amount of $907,000. This payment will be made in consideration of extension of the bonds for 10 years from the present maturity date of May 1, 1937. Current assets, according to the company's statement, exceed current liabilities by $3,273,380.

Autocar sales for January and February, 1936, are 102 per cent ahead of the corresponding period in 1935, while Studebaker truck sales through Autocar outlets has increased 98 per cent for the same period.

Goodrich Announces Express Tire

A new 32 x 6 truck type express tire for fast service is announced by The B. F. Goodrich Co. Goodrich has found that there is a wide need for this type tire in this size, replacing the Universal tread in long-distance hauls where traction is not a dominant factor. This is especially true, Goodrich engineers report, in trailer service, where the new type tread tends to prevent sidesway and give longer mileage.

White Sales Under Full Sail

Current orders for White trucks and buses are breaking records for the past several years, according to reports from the White Motor Co., Cleveland, Ohio. January business showed an increase of 77 per cent over the same month last year, while February sales were more than 100 per cent above February, 1935.

Hercules Plans 5000 Small Diesels

An expansion program designed to increase facilities for the production of gasoline and Diesel engines is nearing completion at Hercules Motors Corp., Canton, Ohio.

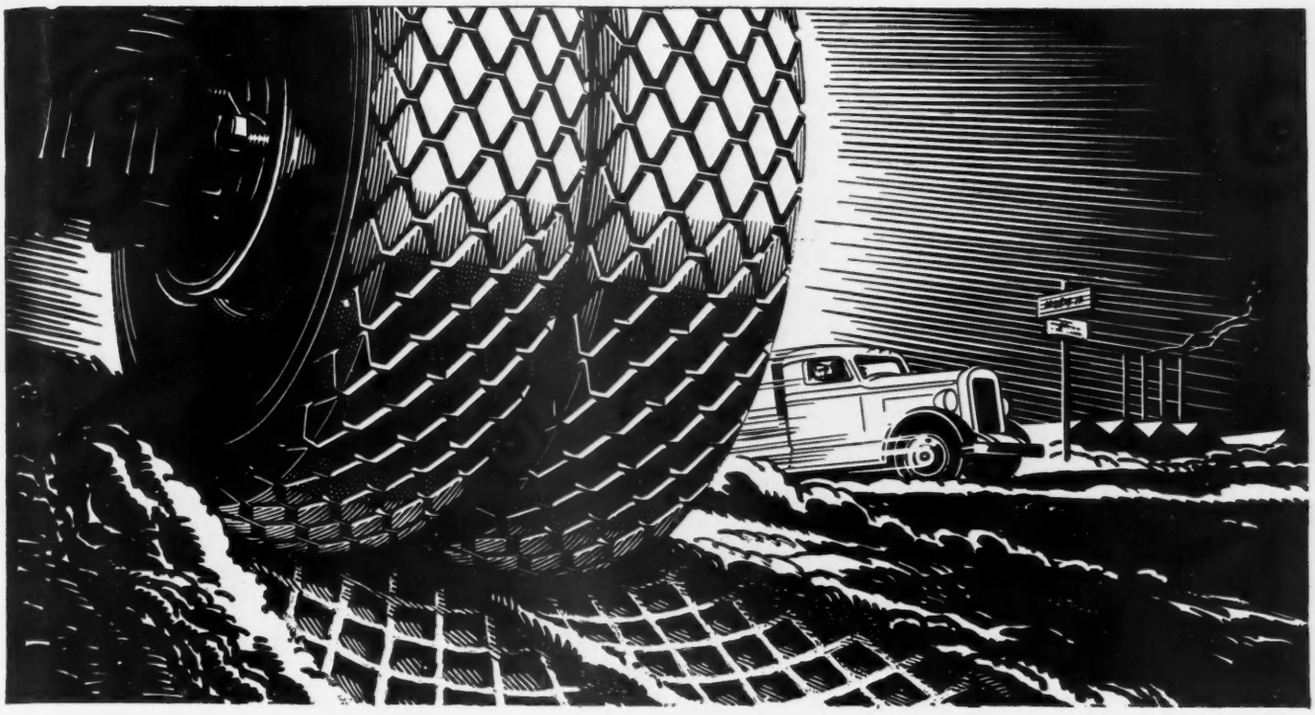
The Canton plant will have an addition of 70,000 sq. ft. of floor space. Plans have been completed for the production of the small Hercules Diesel engine at the rate of 50 per day. Hercules expects to produce from 4500 to 5000 of these engines during 1936.

Fischer With Algoma

George I. Fischer has joined the new technical division of the Algoma Plywood & Veneer Co. He was formerly with Haskelite Mfg. Corp.

Tariffs Become Effective

Tariff provisions of the Motor Carrier Act went into effect April 1. Rate filings were carried up to the last minute, March 31. This extension was granted because flood conditions caused unforeseen delays.



THIS TREAD* SAVES MONEY FOR FLEET OPERATORS

IMPROVED HIGH PROFILE GOODYEAR TRUCK TIRES . . . BETTER IN MANY WAYS

The Improved High Profile Goodyear Truck Tires are bigger, sturdier, tougher. They bring to trucks and trailers longer, more dependable, more economical service.

You'll like that improved All-Weather tread. Less skid on highways. More traction off the road.

You'll appreciate, too, the many other money saving features of this Improved Goodyear that is built with more rubber, more cotton, more air space—*more miles of wear.*

It gives you these superior features that have made Goodyear Truck Tires MONEY SAVERS the world over:

- **SUPERTWIST CORD**—greater body strength.
- **EXTRA-STRONG BEAD CONSTRUCTION**—for heavy, swaying loads.
- **HIGH PROFILE TREAD SHAPE**—more rubber on ground, greater flexing area.
- **HEAT-RESISTING RUBBER**—long wear, blow-out protection.
- **PIMA COTTON**—longest cotton fibre grown.

Ask your Goodyear dealer. He'll be glad to tell you about Improved High Profile Goodyear Truck Tires.

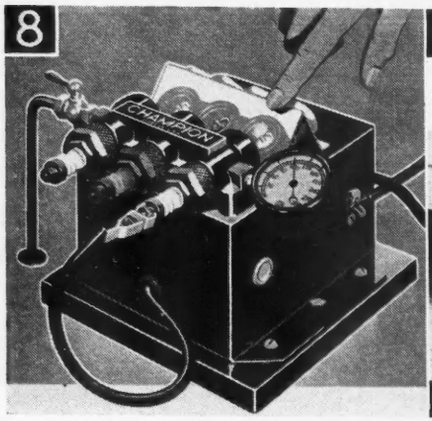
***ALL-WEATHER TREAD**

Most scientific tread design ever developed. Deep-cut diamond blocks provide better traction, better grip and pull, better non-skid protection. Broad and flat, presenting more surface to the ground, providing easier rolling. Tough rubber for long wear.

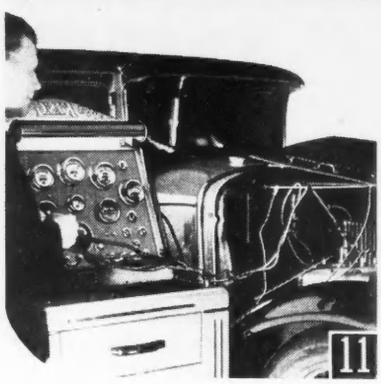
Proved in over twenty-five years' service. Exclusive with Goodyear.

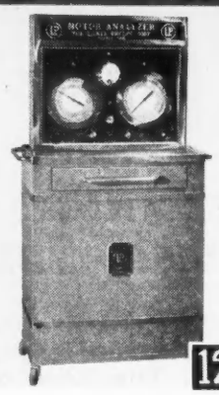
THE GOODYEAR TIRE & RUBBER COMPANY, INC., AKRON, OHIO

GOODYEAR TRUCK TIRES money savers



8—Plugs may be tested under compression corresponding to operation of motor in the Champion spark plug tester. 9—The AC spark plug cleaner reduces the time required for this job to a few seconds while the round wire feeler gage resets the gaps safely. 10—Allen tune-up unit (left) and combustion analyzer (right) do a complete checking job. 11—King motor tester of all-welded construction for checking anything from coils to bulbs. 12—Lantz-Phelps motor analyzer operates entirely from a 6-volt battery to test all motor speeds with continuous vacuum and exhaust analysis. 13—U.S. Gauge compressometer for accurate tests of engine compression





Tune-Up Devices Turn Up Savings

(CONTINUED FROM PAGE 21)

tion among the electrical instruments is a compressometer and a vacuum gage. When an engine has been given the business with all of these instruments there is little chance that there is much that the mechanic on the job does not know about the engine. If there is—he is not much of a mechanic. This should not be interpreted as meaning that you can march a green mechanic up to a test bench and have the equipment do the thinking for the mechanic, but a mechanic selected for his alertness given time to gain experience on the equipment will tell you what is wrong and what should be done with an engine with a remarkable degree of success.

It is not necessary for the small fleet operator to think in terms of the most elaborate engine analyzers with their relatively high purchase price. The instruments included in the complete analyzers are grouped in various combinations so that the particular instruments that seem the most desirable to individual taste or requirements can be purchased in a convenient panel as a regular piece of equipment. In addition all of the component parts of a complete engine analyzer can be purchased separately and the fact that they are not part of a large piece of equipment does not in any way detract from their usefulness. Purchase of a compressometer and then a vacuum gage and so on through the list is often a boon to the fleet operator who for one reason or other must buy these expensive pieces of equipment piecemeal.

SPARK plugs are serviced first by cleaning in a device made for that purpose. The process is a sand-blasting treatment that really cleans the plug. When a plug is clean and only when it is clean is there any right to expect it to perform normally. To determine its performance the plug can be tested in a machine which duplicates combustion chamber conditions of pressure and shows the operator just what the plug is doing in the engine.

It is inconceivable that a mechanic can do enough engine tuning with the ordinary tools that one finds in a mechanic's tool box to make it worth the time and effort that it takes. With modern engines designed with high compression ratios for high speeds and high output per cubic inch of piston displacement, shop equipment is necessary to complete every step in the process. The importance of the engine tune is clearly shown by its prominence in every preventive maintenance program. Preventive maintenance programs consist largely of tune-up, lubrication and inspection of the chassis.

Take average modern tune-up procedure and see how far the mechanic really gets without shop equipment. The first step is to clean and check spark plugs and set to proper standards. In this operation a spark plug cleaner and tester are required. A spark plug cannot be properly cleaned with a pocket knife nor can it be tested by looking at it.

THE next operation is check ignition cables and battery. This operation consists almost entirely of reading voltmeter and ammeters and when the readings of these gages indicate an unsatisfactory condition make the necessary replacements. Following is: check the breaker points and check the spark timing. This is another equipment job, frequently complicated by a double set of breakers which make a synchronizing operation necessary. Equipment to do this job ranges all the way from the low tension light to the oscillograph

(TURN TO PAGE 50, PLEASE)

"THOSE GUYS SAID 'WE'LL CUT YOUR OPERATING COST' . . . AND BY GEORGE THEY DID!"*

**From an actual conversation between two fleet drivers over coffee and doughnuts at a Lincoln Highway barbecue stand a few miles east of Gary, Indiana.*

HERE'S what they were talking about . . . One of those drivers worked for a meat packer who runs 80 two-ton trucks and 30 salesmen's cars. Fleet operating expenses had become prohibitive, and there was no visible reason for it.

Then—the fleet superintendent heard what Standard Oil (Indiana) combustion engineers had done in lowering operating cost for other fleets, and called us.

Our engineers made their customary free combustion analysis, checking every engine with accurate instruments. Twenty-two distinct factors contribute to gasoline and oil waste, power loss and inefficient operation . . . every one must be checked.

From that analysis and our recommendations adjustments were made that gave *a fleet gasoline saving of 14%!*

That's the sort of operating efficiency our combustion engineers can maintain for your fleet. They've done it for hundreds of other fleet operators. A phone call to the Standard Oil (Indiana) engineer in your territory today can lower tomorrow's fleet operating cost.

STANDARD OIL COMPANY (*INDIANA*)
910 SOUTH MICHIGAN AVENUE, CHICAGO, ILL.

PRODUCTS: ISO-VIS "D" and POLARINE Motor Oil • Standard Transmission Oil (Summer and Winter Grades) • Standard Heavy Duty Gear Grease Standard Wheel Bearing Grease (Medium and Heavy) • Standard Fibre Grease (for Universals) • Standard Pressure Gun Grease (Medium and Heavy) Standard Water Pump Grease • Standard Steering Gear Lubricant.

Copr. 1936, Standard Oil Co.

STANDARD OIL SERVICE

NEWS

(CONTINUED FROM PAGE 46)

Ensign Moves Office in Chicago

Removal of the Chicago headquarters to larger space in that city is announced by Ensign Carburetor Co., of Los Angeles. Greatly increased warehouse facilities have been provided at the new location, 2644 S. Michigan Ave.

Thompson Promotes Duggan

Tom O. Duggan has been promoted to general manager of the service division of Thompson Products, Inc., Cleveland.

Hudson and Fletcher Promoted

R. G. Hudson has been appointed manager of Studebaker truck division at South Bend. C. Scott Fletcher was appointed sales promotion manager of the company's truck and passenger car divisions.

NHUC Booklet on Legislation

The National Highways Users Conference, Washington, D. C., has issued a pamphlet, "Motor Vehicle Legislation, The 1935 Trend." This pamphlet provides a digest of the laws enacted and the bills proposed in the sessions of legislatures of the 47 states which convened for either regular or special sessions during the year 1935. A chart gives specific information on laws enacted by states.

Winchester Book for Fleetmen

A new book for fleet men, "Automotive Money Saving Facts," by J. F. Winchester, manager, General Automotive Department, Standard Oil Co. of New Jersey, has been published by the Traffic Publishing Co., 100 6th Ave., New York. The book priced at $3, has been written to fill a need for a text book for fleet operators. Personnel work and training of employees are discussed in the various chapters of the book as well as equipment selection and the mechanical processes and procedures necessary for servicing the different units of the automotive vehicle. The book is practical, as a reader would expect from this author.

550 Truckers in Contest

Over 550 operators have joined the second American Trucking Associations, Inc., safety contest representing 46 states. The operators represent more than 10,000 trucks. The contest will close July 31, 1936.

Truck Sales Gain 9 Per Cent

New truck registrations for February are estimated at 38,000 based on reports from 33 states, as compared with the 34,797 units sold during February, 1935. Gain is 9 per cent.

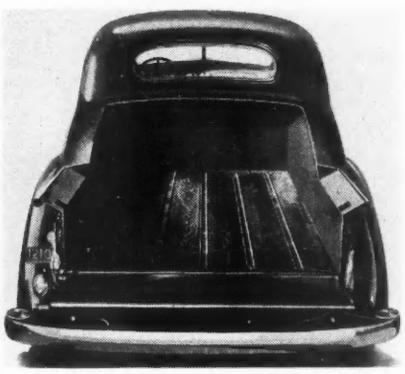
Production for February totals 66,927 units, a drop of 2440 units below production for the January total of 69,367. However, February, 1936, exceeded February, 1935, production by 2654 units for an increase of 4 per cent. Production for the two months of January and February of 1936 totaled 136,294 units as against the same two months in 1935 when 130,163 units were produced. Two months gain is 4.9 per cent.

Cummins Appoints Two Dealers

The Cummins Engine Co., Columbus, Ind., announces the addition of two new dealers. They are: West India Machinery & Supply Co., San Juan, Porto Rico, and K. A. McIntyre, 14 W. Hudson St., Columbus, Ohio.

Chevrolet Has Coupe Pickup

A coupe pickup combining passenger car appearance with the utility of the small commercial car has been added by Chevrolet Motor Co. to its standard line.



The load space of the box is 60 in. long by 41 1/16 in. wide inside. The opening under the rear deck is 16¼ in. deep.

Bendix B-K Plan a Success

The factory-rebuilt B-K power brake exchange service, launched recently by the Bendix Products Corp., is proving a tremendous success, according to M. M. Cunningham, service sales promotion manager.

Tune-Up Devices Turn Up Savings

(CONTINUED FROM PAGE 48)

with built-in accuracy increasing in about direct proportion to the price of the equipment. Check valve tappet clearances. Check carburetor and service air cleaner. Check compression of each cylinder with a compression gage. This operation does nothing to make the truck operate better, but is done to provide an indication of the internal condition of the engine.

The following operation, check with a vacuum gage, is done for exactly the same reason. Both of these checking operations are absolutely essential if the tune-up is to contribute anything to the fleet operator's knowledge of the condition of his fleet.

THE final check-up of the tune-up is an exhaust gas analysis which is a great deal in the nature of a cover-all test to ascertain if all of the elements are working in harmony. A more detailed review of the tune-up step by step would be an explanation of the working of equipment intended to promote economical operation.

The number of fleet operators who have positive mechanical knowledge of the condition of their trucks is not as high as the importance of this knowledge would lead you to believe. In a recent survey COMMERCIAL CAR JOURNAL found that: 37 of 104 fleets have a vacuum gage, 44 have a compression gage, 15 have an engine analyzer, 12 have an exhaust gas analyzer, 63 have a spark plug tester, 56 have a spark plug cleaner, 34 have synchronizing equipment of some description, 39 have a condenser tester and 45 have a coil tester. These fleets were principally in the five to 25 truck class.

Yoloy Makes Good

The Youngstown Sheet & Tube Co., Youngstown, Ohio, reports a growing use of Yoloy, its new nickel copper steel, in the manufacture of trucks, trailers and other equipment where reduction in weight, without sacrifice of strength and wearing qualities, is of utmost importance. Its use for truck tanks makes possible reductions of 25 to 50 per cent in the gage of sheet.

New Truck Registrations by Makes by Months

	Autocar	Brockway	Chevrolet	Diamond T	Dodge	Federal	Ford	G. M. C.	International	Mack	Reo	Sterling	Stewart	Studebaker	White-Indiana	Miscellaneous	Total
January*.....1936	70	88	14,766	494	6,042	219	14,144	418	4,673	86	326	8	83	140	483	602	42,642
January.....1935	71	86	9,867	550	5,141	152	13,260	858	3,513	114	380	10	42	127	308	280	34,759

*Summary of 48 states, Massachusetts missing.

COMMERCIAL CAR JOURNAL'S TRUCK SPECIFICATIONS TABLE

The Specifications Table is brought up to date in each issue from data supplied monthly by truck manufacturers

KEY TO ABBREVIATIONS AND REFERENCE MARKS

GENERAL

Make and Model—Only basic models are listed. Variations are available with most manufacturers.

Tonnage Rating—Where a spread of ratings is given the maximum ratings are for ideal operating conditions and the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

Chassis Price—Chassis price quoted applies to standard wheelbase with standard tires. All prices are F.O.B. factory.

(***)Prices ready next issue.

Gross Vehicle Weight—Is chassis weight stripped, plus body and cab weight, plus payload. Gross vehicle weight is based on maximum recommended tire size, not on tires listed as standard.

Chassis Weight Stripped—Is weight of standard chassis with standard equipment, with crankcase and cooling system full, and 5 gal. of gasoline in tank. Does not include weight of cab. Exceptions are noted.

Maximum Tire Size—Is furnished at extra cost, if the maximum differs from the standard tire size. Dual rears are understood except where otherwise noted.

Maximum Brake H.P. at Given R.P.M.—Is actual dynamometer reading without accessories.

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

Tractors—Unless given the designation N (meaning not available as tractor), all standard models may be assumed to be available as tractors.

(D)—Diesel equipped.
(N)—Not available as tractor.
(T)—Specifically designed for tractor use only.
c.o.e.—Cab-over-engine design.
e.b.s.—Engine-between-seat design
e.u.s.—Engine-under-seat design.

(2) **General Motors**—Tire size indicated in column "Max. Tire Size Furnished" is maximum capacity dual tires recommended for normal operating conditions. Model T-16L, ¾-1 ton, same as T-16 except light riding springs and 4.57 to 1 gear ratio. Models T-16H to T-61H inclusive are also available for export only as coach chassis. Dual performance rear axles at extra cost for Models T-16, T-16H, T-18, T-18H, T-23, T-23H, T-33, T-33H and T-46. Double reduction rear axle at extra cost for Models T-46, T-73H and T-74. GMC "400" engine group option at extra cost for Model T-46. GMC "331" engine group option at price deduction for Model T-61. GMC "450" engine at extra cost for Models T-61 and T-61H. GMC "400" engine at price deduction for Model T-78. Chassis prices and weights on all cab-over-engine models include the cab. A complete line of super-heavy duty models designated as T-85 series (4-wheel) and T-95 series (6-wheel) custom-built to exactly meet customer's requirements are available with a range of axles, wheelbases, engines, transmissions, etc., and prices will be quoted upon application.

(3) **International Harvester**—Model C-10, ¾-ton, same as C-20 except less spring leaves.

(4) **Reo**—2J, 2K same as 2H except 166 in. wheelbase and price of $1695. 3J same as 3H except wheelbase of 170 in. and price of $2085; 3K same as 3H except 185 in. wheelbase and price of $2155. 3M same as 3H except 205 in. wheelbase.

(5) **Stewart**—46H and 47H available with two-speed rear axle.

(6) **White**—Each model shown is furnished with different specifications for different tonnage ratings. (*)—Factory governed speed 2400 r.p.m.

(6a) **White**—Special prices for each installation.

(*)**White**—Tractor rating only.

(7) **Autocar**—Larger service brake areas on rear axles are provided when tires of 24" base are supplied.

(a) Price does not include auxiliary axle. Chassis weight includes auxiliary axle complete; area of brake lining and drum area do not include auxiliary rear axle.

(d) Models intended for dump or tractor service only.

(8) **Le Moon**—Models 306, 406, 506 and 610 are available as cab-over-engine models.

(9) **Willys**—Price includes body and complete equipment, and is complete price at Toledo.

(10) **Walker**—Frame lengths may be changed, within limits, to suit individual requirements, at no additional cost.

(11) **Biederman**—Will furnish Continental, Hercules, Waukesha and Lycoming engines at the buyer's option.

(12) **Hendrickson**—All models available in cab-over-engine design for slight additional charge.

(13) **Chevrolet**—Auxiliary Springs must also be used at an additional charge of $12.50.

(a) **Mack**—Weights in Chassis Weight column are shipping weights which include weight of a chassis of medium standard wheelbase, cab, prevailing tire size and spare tire, ready for the road.

(b) **Sterling**—Available with Diesel engine.

(c) **Sterling**—Available with Hesselman engine.

MAKES—ALL

A LaF—American La France.
B—Bendix. **BL**—Brown-Lipe.
BO—Bendix front, Own rear.
Bu or Bud—Buda.
BW—Borg Warner
BWs—Bendix front, Westinghouse rear.
C or Col—Columbia.
Cat—Caterpillar
Cl or Cla—Clark.
Co—Covert.
Con—Continental.
Cot—Cotta Gear.
Cum—Cummins-Diesel
DG—Detroit Gear and Machine.
Eat—Eaton. **Fu**—Fuller.
Her—Hercules. **L**—Lockheed.
Li—Lipe, W. C.
LO—Lockheed front, Own rear
LW—Lockheed front, Wisconsin rear.
Lyc—Lycoming.
O or Ow—Own.
Op or Opt—Optional.
Shu—Shuler.
Ste or St—Sterling.
T or Tim—Timken.
TW—Timken-Wisconsin
TWH—Timken Wisconsin Herrington
WG—Warner Gear.
W-Hes—Waukesha Hesselman.
Wau—Waukesha.
W or Wis—Wisconsin.
Ws—Westinghouse.

BRAKES—SERVICE

Location

2—Two Wheels, rear only.
2/4—Two-wheel brakes effective on all four wheels through driveshaft.
4/6—Brakes on four rear wheels effective on all wheels through driveshaft.
T/4—Brake on transmission effective on all four wheels through driveshaft.
4—Four Wheels, front and rear.
4r—Four Wheels, rear only.
6—Six Wheels, front and rear.
J—Jackshaft.
P—Propeller shaft.

Type

I—Internal.
X—External.

Operation

A—Air.
D—Hydraulic and mechanical.
H—Hydraulic.
M—Mechanical.
V—Vacuum.

BRAKES—HAND

Location

C—Center of double propeller shaft.
2—Rear wheels.
4—Four wheels.
R—Worm or bevel gearshaft.
T—Transmission.
F—Driveshaft.

Type

D—Tru-Stop disk.
I—Internal.
X—External.

BRAKE DRUMS

Material

a—Cast alloy iron.
A—American Car Fdry.
C—Centrifuse.
D—Dayton.
E—Ermalite.
G—Gunite.
H—Hunt Spiller.
c—Cast iron.
p—Pressed steel.
P—Pressed steel.
s—Cast steel.

(Where a combination of any of the above is used, the first reference mark applies to the front and the second to the rear drums.)

FRAME

Type

I—"I" Beam.
C—Channel.
T—Channel tapered front and rear.
L—Channel reinforced with liner.
B—Channel reinforced with both liner and fishplate.
P—Channel reinforced with plate.
TL—Channel tapered front and rear reinforced with liner.
D—Drop Center.
Tf—Tapered front.
X—x-Braced.

GOVERNOR STANDARD

Y—Yes.
N—No.

REAR AXLE

Final Drive and Type

B—Bevel.
C—Chain.
D—Dead.
F—Full-floating.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
w/2—Worm or Double Reduction Optional.
½—Semi-floating.
¾—Three-quarter floating.
(*) Ratios other than standard at extra cost.
(**) Only one ratio.

Drive and Torque

A—Radius Rods and Torque Arm.
B—Radius Rod and Torque Tube
H—Hotchkiss. (springs)
R—Radius Rods
T—Torque Arm.
U—Torque Tube.

WHEELS DRIVEN

2C—Forward unit of Rear Axle Group.
2R—Rear Unit of Rear Axle Group.
4R—Forward and rear units of Rear Axle Group.
4F—Front Axle and Forward unit of Rear Axle Group.
6—All wheels.

FORMULAS

(For Transportation Engineering)

Miles Per Hour

$$M.P.H. = \frac{R.P.M. \times D.}{336 \times F.G.R.}$$

M.P.H.=Miles per hour.
R.P.M.=Revolutions per minute.
D.=Effective tire diameter.
F.G.R.=Final gear ratio.

Grade Ability

GA=TE—RR.
GA=Grade ability.
TE=Tractive effort.
RR=Road resistance—.012 for hard surfaced roads.

Tractive Effort

$$TE = \frac{\text{in. lb. torque} \times F.G.R. \times EFF.}{G.V.W. \times R.}$$

EFF.=Efficiency—.90 for all rear axles except worm, then .85.
R.=Rolling radius.
G.V.W.=Gross vehicle weight.
in. lb. torque=12 x torque in lb. ft.

Torque in LB. FT.

Torque=.65 x cu. in. displacement. (This is approximate and should be used only when actual torque is not known.)

Cu. In. Displacement

D=B x B x .7854 x S x No. of Cyl.

AMA Horsepower Rating

$$AMA\ H.P. = \frac{B \times B \times No.\ of\ Cyl.}{2.5}$$

D=Cu. in. displacement.
B=Cylinder bore.
S=Cylinder stroke.

TIRE TABLE

(Tire and Rim Association, Inc.)

Balloon Tires

Size	Capacity (lb.)	Size	Capacity (lb.)
5.50/20	1225	9.75/15	3175
6.00/20	1400	9.75/18	3600
6.50/18	1550	9.75/20	3900
6.50/20	1700	9.75/22	4200
7.00/18	1800	9.75/24	4400
7.00/20	1950	10.50/20	4700
7.50/18	2025	10.50/22	5000
7.50/20	2200	10.50/24	5200
7.50/24	2500	11.25/20	5450
8.25/18	2450	11.25/22	5800
8.25/20	2650	11.25/24	6050
8.25/22	2850	12.00/20	6250
8.25/24	3025	12.00/24	6950
9.00/15	2650	12.75/20	7200
9.00/18	3000	12.75/24	8000
9.00/20	3250	13.50/20	8200
9.00/22	3500	13.50/24	9100
9.00/24	3650		

High Pressure Tires

30x5	1700	34x7	2800
34x5	1950	38x7	3200
32x6	1950	36x8	3600
(8-ply)		40x8	4000
32x6	2200	38x9	4500
(10-ply)		42x9	5000
36x6	2500	40x10	5500
32x7	2550	44x10	6000

Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make	Location	Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Armleder.....11H	1½–2½	1295	156	195	11500	4850	6.50/20D	7.00/20	Con 20C	6–3⅜x4⅝	248	5.0	150	76–280@	7–2⅜x10	N	BL 35	4	Tim	BF	H	6.6–5.14	Tim	L4IH			254	380	G	TX	Opt	6x3x¼	P
2	.....21Ha	2½–4	2185	160	207	15300	5450	8.25/20D	8.25/20	Her WXC	6–4x4½	339	4.7	225	78–2400	7–2⅝x13¼	Y	Fu 5-A-38	5	Tim	BF	H	6.8–5.83	Tim	L4IHV			312	527	G	TX	Opt	6x3x¼	P
3	.....31Ha	3–4½	2695	146	213	19500	5750	9.00/20D	9.00/20	Her WXC	6–4x4½	339	4.7	225	78–2400	7–2⅝x13¼	Y	Fu 5-A-38	5	Tim	BF	R	7.4–5.71	Tim	L4IHV			342	578	G	TX	Opt	7x3x¼	P
4	.....41Ha	4½–6	3050	146	227	23000	6600	9.75/20D	9.75/20	Her WXC	6–4x4½	339	4.7	225	78–2400	7–2⅝x13¼	Y	Fu 5-A-38	5	Tim	BF	R	7.8–6.14	Shu	L4IHV			402	659	G	TX	Opt	7x3x¼	P
5	.....61Ha	5–7	3725	146	227	24000	7400	9.75/20D	9.75/20	Her WXC2	6–4½x4½	360	4.7	238	85–2400	7–3x15	Y	Fu 5-A-38	5	Own	2F	R	8.94–7.14	Shu	L4IHV			507	768	H	TX	Opt	8½x3x	P
6	.....(T) TRD	10	4150	148	174	35000	7100	9.00/20D	9.00/20	Her YXC	6–4⅜x4¾	428	4.4	280	93–2200	7–3x15	Y	Fu 5-A-53	5	Own	2F	R	8.94–7.14	Shu	L4IHV			507	768	H	TD	Opt	7x3x¼	P
7	.....(T) TRDA	12	4350	148	174	39000	7226	9.75/20D	9.75/20	Her YXC3	6–4⅜x4¾	478	4.4	318	103–2200	7–3x15	Y	Fu 5-A-53	5	Own	2F	R	8.94–7.14	Shu	L4IHV			507	768	H	TD	Opt	7x3x¼	P
8	.....(T) TRDB	15	4595	148	174	45000	7326	9.75/20D	9.75/20	Her RXC	6–4⅜x5¼	529	4.4	355	115–2200	7–3x15	Y	Fu 5-A-53	5	Wis	2F	R	8.94–7.14	Shu	L4IHV			507	768	H	TD	Opt	7x3x¼	P
9	Autocar (N) RH	2½–6½	3250	174	192	.....	6893	8.25/20D	9.75/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 33000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
10	...(7) (T) RHT	6–9	3250	150	174	.....	6746	8.25/20D	9.00/22	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 33000	LO4IDV	440	693	c	2I	60½	8x3x¼	T
11	.....(d) RHD	3–4	3250	150	160	.....	6619	8.25/20D	9.00/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	7.13–7.88	Tim 33000	LO4IDV	440	693	c	2I	60½	8x3x¼	T
12	.....(N) D	2½–6½	3550	174	192	.....	7055	8.25/20D	9.75/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 33000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
13	.....(T) DT	6–9	3550	150	174	.....	6849	8.25/20D	9.00/22	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 33000	LO4IDV	440	693	c	2I	60½	8x3x¼	T
14	.....(N) DF	4–8½	3875	159	177	.....	7719	9.00/20D	10.50/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 33000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
15	.....(T) DFT	7½–12	3875	135	159	.....	7728	9.00/20D	9.75/22	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DFA	2F	H	6.49–7.88	Tim 35000	LO4IDV	519	832	c	2I	84½	8x3x¼	T
16	.....(d) DP	3½–4	3725	150	160	.....	6891	8.25/20D	9.00/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DFA	2F	H	6.49–7.88	Tim 35000	LO4IDV	519	832	c	2I	60½	8x3x¼	T
17	.....(d) DH	4–5½	4050	145	159	.....	7804	9.00/20D	9.75/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DFA	2F	H	7.13–7.88	Tim 33000	LO4IDV	519	832	c	2I	60½	8x3x¼	T
18	.....(N) N	5½–8	4650	178	213	.....	8731	9.75/20D	10.50/24	Own 404	6–4¼x4¾	404	5.5	295	97–2200	7–3x14½	Y	Own DF5	5	Own N	2F	H	7.20–10.4	Tim 35000	LO4IDV	519	832	c	2I	70½	8x3x¼	T
19	.....(T) NT	7–11	4575	137	158	.....	8639	9.00/20D	9.75/22	Own 404	6–4¼x4¾	404	5.5	295	97–2200	7–3x14½	Y	Own DF5	5	Own N	2F	H	4.67–10.4	Tim 35000	LO4IDV	543	931	c	FD	102½	9x3x¼	T
♦ 20	.....(N) NF	6–9	4900	178	213	.....	9190	9.75/22D	10.50/24	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own DF5	5	Own C	2F	H	5.18–10.4	Tim 35000	LO4IDV	519	832	c	FD	102½	9x3x¼	T
♦ 21	.....(N) NFS	7½	5600	208	208	.....	10000	10.50/20D	10.50/20	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF5	5	Own TF	2F	H	4.41–10.4	Tim 35000	LO4IDV	519	832	c	FD	61½	8x3x¼	T
♦ 22	.....(T) NFT	7–15½	4900	137	158	.....	8905	9.00/22D	10.50/24	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF4	4	Own TF	2F	H	6.12–10.4	Tim 26450	LO4IDV	543	931	c	FD	102½	9x3x¼	T
♦ 23	..... (d) S	6–8	5850	165	165	.....	10016	9.75/22D	10.50/22	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF4	4	Own CGA	2F	H	7.69–8.52	Tim 26450	B04IMV	580	931	c	FD	119¾	9x3x¼	T
24	.....(N) CE	7½	6000	172	203	.....	10300	36x7†D	36x7S*	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF4	4	Own C	2F	H	7.20–10.4	Own SCH	O2IMV	502	931	c	FD	89½	9x3x¼	T
25	.....(N) T	7½–10½	5900	178	228	.....	9979	10.50/22D	11.25/24	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3¼x14¼	Y	Own TF4	4	Own CGA	2F	H	7.69–8.52	Tim 26450	LO4IDV	543	931	c	FD	89½	9x3x¼	T
26	.....(N) TS	10	6600	204	204	.....	10823	10.50/24D	10.50/24	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF5	5	Own TG	2F	H	5.40–8.68	Tim 26450	TO4IA	543	931	c	FD	88½	9x3x¼	T
27	.....(T) TT	8½–15	6150	137	158	.....	9883	9.75/20D	10.50/24	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3¼x14½	Y	Own TF4	4	Own TG	2F	H	7.20–8.68	Tim 26452	TO4IA	700	931	c	FD	102½	9x3x¼	T
28	.....(d) C	10–14	6800	165	165	.....	11375	10.50/24D	11.25/24	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3¼x14½	Y	Own TF5	5	Own CG	2F	H	7.69–8.52	Tim 26450	TO4IA	543	931	c	FD	129	10½x3x	T
29	.....(N) TF	15	7500	236	250	.....	12053	10.50/24D	11.25/24	Wau 6RB	6–5x5¾	677	4.7	461	125–1800	4–3½x11¾	Y	BL 7351	5	Own CGA	2F	H	7.69–8.52	Tim 27450	LO4IDV	663	1051	c	FD	90	10½x3x	T
30	.....(T) TFT	15	7500	155	177	.....	11537	10.50/24D	11.25/24	Wau 6RB	6–5x5¾	677	4.7	461	125–1800	4–3½x11¾	Y	BL 7351	5	Own CGA	2F	H	7.69–8.52	Tim 27450	TO4IA	659	1051	c	FD	151	10½x3x	T
31	e.u.s. (N) UD	3½–6½	3750	109	145	.....	7629	8.25/20D	9.75/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	7.69–8.52	Tim 27450	TO4IA	659	1051	c	FD	62	10½x3x	T
32	e.u.s. (T) UDT	5½–8½	3750	109	109	.....	7623	8.25/20D	9.00/22	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 35000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
33	e.u.s. (d) UDP	4–5½	4650	100	100	.....	8525	9.00/20D	9.75/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DF	2F	H	6.49–7.88	Tim 35000	LO4IDV	440	693	c	2I	84½	8x3x¼	T
34	e.u.s. (N) UDF	5–8½	4075	109	145	.....	8357	9.00/20D	10.50/20	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own C	2F	H	5.65–10.4	Tim 35000	LO4IDV	519	931	c	2I	84½	8x3x¼	T
35	e.u.s. (T) UDFT	7–11½	4250	91	109	.....	8262	9.00/20D	9.75/22	Own 358	6–4x4¾	358	5.5	250	85–2300	7–3x12⅝	Y	Own DF5	5	Own DFA	2F	H	6.49–7.88	Tim 26450	LO4IDV	519	931	c	2I	75½	8x3x¼	T
36	e.u.s. (N) UN	5½–8	4875	109	163	.....	9259	9.00/22D	10.50/20	Own 404	6–4¼x4¾	404	5.5	250	97–2200	7–3x14½	Y	Own DF5	5	Own C&N	2F	H	5.18–10.4	Tim 26450	LO4IDV	543	931	c	FD	84¼	8x3x¼	T
37	e.u.s. (T) UNT	6½–11	4600	98	109	.....	8665	9.00/20D	9.75/22	Own 404	6–4¼x4¾	404	5.5	295	97–2200	7–3x14½	Y	Own DF5	5	Own C	2F	H	5.18–10.4	Tim 35000	LO4IDV	519	931	c	FD	71¼	8x3x¼	T
38 *	e.u.s. (N) UNF	6½–9	5100	128	163	.....	9731	9.75/20D	10.50/24	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF5	5	Own TF	2F	H	4.41–10.4	Tim 26450	LO4IDV	543	931	c	FD	103¼	9x3x¼	T
39	e.u.s. (T) UNFT	6½–15½	5000	98	109	.....	8935	9.00/20D	10.50/24	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF5	5	Own C	2F	H	5.40–10.4	Tim 26450	LO4IDV	543	931	c	FD	103¼	9x3x¼	T
40	e.u.s. (N) UNFS	7½	5600	145	145	.....	9585	10.50/20D	10.50/20	Own 404	6–4¼x4¾	404	5.5	295	97–2200	7–3x14½	Y	Own DF4	4	Own TF	2F	H	6.12–10.4	Tim 26452	B4IMV	637	931	c	FD	120¼	9x3x¼	T
41	e.u.s. (N) UT	7½–10½	6000	128	163	.....	10494	9.75/24D	10.50/24	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3x14	Y	Own TF5	5	Own TG	2F	H	5.40–8.68	Tim 26450	TO4IA	543	931	c	FD	103¼	9x3x¼	T
42	e.u.s. (N) UTS	10	6600	145	145	.....	10427	10.50/24D	10.50/24	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Own TF4	4	Own TG	2F	H	7.20–8.68	Tim 26452	TO4IA	700	931	c	FD	120¼	10½x3x	T
43	e.u.s. (T) UTT	6–15	6100	109	109	.....	10031	9.00/20D	10.50/24	Own 501	6–4½x5¼	501	5.5	375	123–2200	7–3¼x14	Y	Own TF4	4	Own CG	2F	H	7.69–8.52	Tim 26450	TO4IA	543	931	c	FD	84¼	9x3x¼	T
44	e.u.s. (d) US	6–8½	5700	120	120	.....	10018	9.75/22D	10.50/22	Own 453	6–4½x4¾	453	5.5	333	108–2200	7–3x14½	Y	Fu F5	5	Own CGA	2F	H	7.69–8.52	Tim 26450	LO4IDV	543	931	c	FD	95¼	9x3x¼	T
♦ 45	Available....W120	1½–2	1370	Op	Op	12500	4000	6.50/20D	7.50/20	Wau BL	6–3½x4½	245	5.4	165	73–3000	7–2⅝x10¼	N	WG T9	4	Tim 53300	SF	H	•• 6.6	Tim 30000H	L4IH			269	376	a	TX	Opt	10x2½x¼	TX
♦ 46	.....W-170	2½	1780	Op	Op	14000	4800	7.50/20D	8.25/20	Wau BL	6–3½x4½	245	5.4	165	73–3000	7–2⅝x10¼	N	WG T9	4	Tim 54411	SF	R	•• 6.8	Tim 31000H	L4IH			330	582	a	TX	Opt	10x2½x¼	TX
♦ 47	.....W-210	2½	1890	Op	Op	14000	4850	7.50/20D	8.25/20	Wau BK	6–3¾x4¼	282	5.4	188	85–3200	7–2⅝x10¼	Y	Fu 5-A-290	5	Tim 54411	SF	R	•• 6.8	Tim 31000H	L4IH			330	582	a	TX	Opt	10x2½x¼	TX
48	.....W240	3–3½	2175	Op	Op	19000	5500	8.25/20D	9.00/20	Wau BK	6–3¾x4¼	282	5.4	188	85–3200	7–2⅝x10¼	Y	Fu 5-A-290	5	Tim 56410	SF	R	•• 7.4	Tim 32502H	L4IH			330	582	a	TX	Opt	10x2½x¼	TX
49	.....W300	4	3025	Op	Op	21700	7000	9.00/20D	9.75/20	Wau 6-110	6–4x4¾	358	5.1	254	110–2800	7–2⅞x12½	Y	Fu 5-A-380	5	Tim 58205	SF	R	•• 7.8	Tim 35000H	L4IH			376	660	a	TD	Opt	12x2½x¼	TX
50	.....W400	5	4125	Op	Op	26500	8200	9.75/20D	9.75/20	Wau 6-125	6–4⅝x5½	462	5.0	324	125–2600	7–3x13⅞	Y	Fu 5-A-530	5	Tim 65725H	WF	R	•• 8.50	Tim 35000H	L4IHV			462	768	a	TD	Opt	14x3x	TX
51	Biederman (11)..10	1	1095	145	157	10000	3100	7.00/20S	8.25/20S	Con 25A	6–3⅝x4	215	4.9	142	70–2800	4–2¾x6⅜	Y	War T9	4	Cla B373	BF	R	5.1–6.4	Cla F212	L4IH	312	424	G	TX	54	7x3x	T
52	20	1½	1295	157	180	11400	3800	7.00/20D	8.25/20	Wau 6BL	6–3½x4¼	245	5.2	162	75–2800	7–2⅝x10¼	Y	War T9	4	Cla B373	BF	R	5.1–6.4	Cla F212	L4IH	312	424	G	TX	82	7x3x	T
53	30	2	1560	166	190	14000	4800	7.50/20D	9.00/20	Wau 6BL	6–3½x4¼	245	5.2	162	75–2800	7–2⅝x10¼	Y	Fu 5-A-29	4	Cla B373	BF	R	5.6–6.4	Cla F308	L4IH	458	556	G	TX	82	7½x3x¼	T
54	40	2½	1750	180	200	15000	5500	8.25/20D	9.00/20	Wau 6BK	6–3¾x4¼	282	5.0	190	84–2800	7–2⅝x10¼	Y	Fu 5-A-29	5	Cla B613	BF	R	5.6–6.4	Cla F308	L4IH	458	556	G	TX	105	7½x3x¼	T
55	50	3	2205	180	200	16000	6800	8.25/20D	9.00/20	Con E501	6–4¼x4½	318	4.6	205	88–2600	7–2½x12¼	Y	Fu 5-A-29	5	Cla B805	BF	R	6.4–7.2	Cla F308	L4IH	458	556	G	TX	105	8x3x¼	T
56	60	3½	2750	180	210	20000	7100	9.00/20D	10.50/20	Con E602	6–4¼x4½	360	4.5	240	92–2600	7–2½x12¼	Y	Fu 5-A-38	5	Cla B805	BF	R	5.7–7.2	Cla F318	L4IH	490	660	G	PX	105	8x3x¼	T
57	70	5	3600	157	210	24000	7530	9.75/20D	10.50/20	HerWXC3	6–4⅜x4½	361	4.7	265	98–2500	7–2⅝x12¼	Y	Fu 5-A-38	5	Wis 1237	2F	R	7.09–8.94	Tim 35100	Ws4IA	616	836	G	PX	76	9x3x¼	T
58	80	7½	4200	187	210	30000	8500	10.50/20D	12.00/22	Her RX8	6–4½x5¼	500	4.9	330	110–2200	7–3x12⅝		Fu 5-A-53	5	Wis 1737	2F	R	6.0–9.2	Tim 26450	Ws4IA	616	836	G	PX	103	10x3x	T
59	Brockway.....78	1½–2	895	138	164	.....	3965	6.00/20D	32x6	Con 24B	6–3 x4⅜	210	5.7	154	71–3100	4–2¼x6	N	WG T9	4	Tim 53521H	SF	H	5.66–6.6	Tim 30000H	L4IH	248	380	a	TX	65	7 x3x	T
60	87	2–2½	1240	144	176	.....	4435	6.50/20D	7.50/20	Con 28B	6–3⅝x4⅝	248	5.7	170	78–3100	7–2¾x10	N	WG T9	4	Tim 53521H	SF	H	5.66–6.6	Tim 30000H	L4IHV	248	380	a	TX	71	7 x3x	T
61	88	2–2½	1290	150	176	.....	4500	6.50/20D	7.50/20	Con 25B	6–3 x4⅜	244	5.7	171	84–3250	4–2¾x6⅜	N	WG T9	4	Tim 53307H	SF	H	6.2 –6.8	Tim 30000H	L4IHV	300	456	a	TX	71	7 x3x	T
62	.....90X	2½–3	1470	150	176	.....	4635	7.00/20D	34x7	Con 28B	6–3⅝x4⅝	248	5.3	170	78–3100	7–2¾x10	N	WG T9	4	Tim 53307H	SF	H	5.83–6.8	Tim 31000H	L4IHV	336	528	a	TX	77	7 x3x	T
63	92	3	1560	150	188	.....	4700	7.00/20D	8.25/20	Con 25B	6–3 x4⅜	244	5.7	171	84–3250	4–2¾x6⅜	N	WG T9	4	Tim 54411H	SF	H	5.83–6.8	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
64	94	3–4	1850	156	188	.....	5050	7.50/20D	8.25/20	Con 25B	6–3 x4⅜	244	5.7	171	84–3250	4–2¾x6⅜	N	BL B341	4	Tim 56410H	SF	H	6.16–7.4	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
65	96	2½–3	1740	156	176	.....	5150	7.00/20D	8.25/20	Con 29B	6–3 x4½	288	5.4	192	78–2650	7–2¾x13	N	BL B341	4	Tim 53307H	SF	H	5.83–6.8	Tim 31000H	L4IHV	336	528	a	CD	83	7 x3x	T
66	110	3	1900	156	188	.....	5490	7.50/20D	8.25/20	Con 29B	6–3 x4½	288	5.4	192	78–2650	7–2¾x13	N	BL B341	4	Tim 54411H	SF	H	5.83–6.8	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
67	.....125X	3	2075	164	188	.....	5570	7.50/20D	8.25/20	Con 31B	6–3½x4½	318	5.5	214	86–2600	7–2⅝x13	N	BL B341	4	Tim 54411H	SF	H	5.83–6.8	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
68	130	3–4	2245	164	206	.....	6270	8.25/20D	8.25/20	Con 29B	6–3 x4½	288	5.4	192	78–2650	7–2⅝x13	N	BL B341	4	Tim 54411H	SF	H	5.83–6.8	Tim 31000H	L4IHV	365	578	a	CD	83	8x3x¼	T
69	145	3–4	2385	176	206	.....	6390	8.25/20D	9.00/20	Con 31B	6–3½x4½	318	5.5	214	86–2600	7–2⅝x13	N	BL B341	4	Tim 56410H	SF	H	6.16–7.4	Tim 32505H	L4IHV	365	578	a	CD	91	8x3x¼	T
70	.....150X-4	3½–4	2680	176	206	.....	6520	8.25/20D	9.00/20	Con 32B	6–4¼x4½	361	5.4	252	95–2500	7–2⅝x13	N	BL B341	4	Tim 56410H	SF	R	6.16–7.4	Tim 32505H	L4IHV	365	578	a	CD	91	8x3x¼	T
71	.....150X-5	3½–4	2710	176	206	.....	6570	8.25/20D	9.00/20	Con 32B	6–4¼x4½	361	5.4	252	95–2500	7–2⅝x13	Y	BL 3241	5	Tim 56410H	SF	R	5.71–7.4	Tim 32505H	L4IHV	365	578	a	CD	103	8x3x¼	T
72	120	2½–3	2260	156	188	.....	5800	7.50/20D	8.25/20	Con 30B	6–4x4½	311	4.2	203	85–2500	7–2¾x13	Y	Fu 5-A-38	5	Tim 56410H	SF	R	5.71–7.4	Tim 32505H	L4IHV	365	578	a	CD	103	8x3x¼	T
																	N	BL 314	4	Tim 54300H	SF	H	4.86–5.83	Tim 32505H	L4IHV	365	578	a	CD	103	8x3x¼	T
73	140	3–3½	2850	156	200	.....	6385	8.25/20D	9.00/20	Con 30B	6–4x4½	311	4.2	203	85–2500	7–2¾x13	Y	BL 314	4	Wis 5000L	2F	R	6.00–7.35	Tim 32505H	L4IHV	365	578	a	CD	69	8x3x¼	T
74	141	3½–4	3355	170	200	.....	7450	9.00/20D	9.75/22	Con 30B	6–4x4½	311	4.2	203	85–2500	7–2¾x13	Y	BL 314	4	Wis 72000	2F	R	6.28–8.00	Shu 15685B1	L4IHV	407	663	a	CD	83	8x3x¼	T
75	.....130-PS	4–4½	2525	164	206	.....	6250	34x7D	9.00/20	Con 29-B	6–3 x4½	288	5.4	192	78–2650	7–2⅝x13	N	Fu5-A-38	5	Tim 56200H	SF	R	6.16–7.4	Tim 32505H	L4IHV	365	578	a	CD	91	8x3x¼	T
♦ 76	.....160X	4–5	3295	153	219	.....	7350	9.00/20D	9.75/22	Con 32B	6–4¼x4½	361	5.4	252	95–2500	7–2⅝x13	Y	Fu 5A38	5	Tim 58205H	SF	R	6.14–7.8	Shu 15685B1	L4IHV	407	663	a	CD	83	8½x3x	T
♦ 77	.....170X	4–5	3640	153	219	.....	7960	9.00/20D	9.75/22	Con 33B	6–4½x4¾	381	4.4	276	106–2600	7–2¾x13	Y	Fu 5A53	5	Wis 72000L	2F	R	5.00–8.40	Shu 15685B1	L4IHV	407	663	a	CD	83	8½x3x	T
78	.....165X	5 7	3795	153	219	.....	8150	9.75/20D	10.50/22	Con 32B	6–4¼x4½	361	5.4	252	95–2500	7–2⅝x13	Y	Fu 5A38	4	Wis 1337BH	2F	R	5.63–8.59	Shu 15685B1	L4IHV	407	663	a	CD	83	8½x3x	T
79	.....175X	5–7½	4290	153	219	.....	8550	9.00/20D	10.50/22	Con 34B	6–4½x4¾	427	4.2	308	118–2600	7–2¾x13	Y	Fu 5A53	5	Wis 1337BH	2F	R	5.63–8.59	Shu 15685B1	L4IHV	500	772	a	CD	83	8¼x3x	T

† Rear 40 x 8 * Rear 40 x 8D

80	.....195X	5–7½	4230	153	219	.....	8650	9.75/20D	10.50/22	Con 33B	6–4½x4¾	381	4.4	376	106–2600	7–2¾x13	Y	Fu 5A53	5	Wis 1337BH	2F	R	5.63–8.59	Shu 15685B1	L4IHV	500	772	a	CD	83	8¼x3x	T
81	.....220X	7½–10	4930	153	219	.....	9050	10.50/20D	11.25/24	Con 34B	6–4½x4¾	427	4.2	308	118–2600	7–2¾x13	Y	Fu 5A53	5	Wis 1737KH	2F	R	5.63–8.59	Shu 15685B1	L4IHV	500	772	a	CD	83	8¼x3x	T
82	.....240X	6–7½	5130	153	219	.....	8590	9.75/20D	10.50/24	Con 35B	6–4½x5¼	501	4.3	364	135–2200	7–2¾x13	Y	Fu 5A53	5	Wis 1337BH	2F

† Rear 40 x 8 * Rear 40 x 8D

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Fageol.....370RA	5–6	5850	182	200	32000	9400	9.75/20D	10.50/20	Wau 6-125	6–4⅜x5½	462	5.2	324	125–2600	7–3x13⅞	Y	BL 5341	4	Tim66720DH	WF	R	6.02–9.2	Tim 35000H	L4IHV	663	768	G	FD	101⅝	7⅛x3⅛x¼	C
2	(D) concl. 370D	5–6	7600	182	200	26300	10250	9.75/20D	10.50/20	Wau 6D125	6–4¾x5½	585	17.	350	125–2200	7–3⅝x18¾	Y	BL 7341	4	Tim 65725H	WF	R	6.85–9.41	Tim 35000H	L4IHV	484	768	G	FD	101⅝	7⅛x3⅛x¼	C
3	(D)... 370RA–D	5–6	7850	182	200	32000	10500	9.75/20D	10.50/20	Wau 6D125	6–4¾x5½	585	17.	350	125–2200	7–3⅝x18¾	Y	BL 7341	4	Tim66720DH	WF	R	6.02–9.2	Tim 35000H	L4IHV	663	768	G	FD	101⅝	7⅛x3⅛x¼	C
4	.....470HP	6–7	8100	182	200	35000	9550	9.75/20D	10.50/20	Wau 6-125	6–4⅜x5½	462	5.2	324	125–2600	7–3x13⅞	Y	BL 5341	4	Tim66720DH	WF	R	6.02–9.2	Tim 26450H	L4IHV	717	867	G	FD	101⅝	7⅛x3½x¼	C
5	(D).....470D	6–7	8100	182	200	35000	10650	9.75/20D	10.50/22	Wau 6D125	6–4¾x5½	585	17.	350	125–2200	7–3⅝x18¾	Y	BL 7341	4	Tim66720DH	WF	R	6.02–9.2	Tim 26450H	L4IHV	717	867	G	FD	101⅝	7⅛x3½x¼	C
6	.....685RB	8–10	7500	174	174	44000	11950	10.50/24D	11.25/24	Wau 6RB	6–5x5¾	377	4.4	440	125–1800	4–3½x11⅜	N	BL 7341	4	Tim 68720W	WF	R	7.97–10.1	Tim27050Tw	Ws4IA	757	1050	G	FD	86	8¼x4x¾	C
† 7	Federal.....DM	.....	950	108	120	8000	3000	6.00/20†S	7.50/20S	Con W10	4–3⅞x4¼	200	4.7	126	50–2700	3–2½x5⅞	Y	WG T9	4	Cla B374	SF	H	5.66–6.38	Cla F212	L4IH	250	....	a	TX	...	6x2¼x¼	D
† 8	10	¾–1	545	128	152	7500	2950	6.00/20S	6.00/20	Her 00B	4–3¾x4½	199	5.3	127	50–2500	3–2x7	N	WG T9	4	Tim 51200H	SF	H	5.14–5.83	Tim 30020H	L4IH	250	....	a	TX	51⅛	7x2¼x¼	T
† 9	15	1½–2	645	136	195	11000	3500	6.00/20†S	7.50/20	Her JXA	6–3⅛x4¼	228	5.3	149	64–2500	7–2½x10	Y	WG T9	4	Tim 53521H	SF	H	5.14–6.2	Tim 30000H	L4IH	247	....	a	TX	56¾	8½x2¼x¼	T
† 10	18	2–2½	875	136	195	12000	3800	6.50/20D	8.25/20	Her JXB	6–3⅝x4¼	263	5.4	164	68–2500	7–2½x10	Y	WG T9	4	Tim 53303H	SF	H	5.83–6.8	Tim 30003H	L4IH	267	....	a	TX	56¾	8½x2¼x¼	T
† 11	20	2–3	1025	136	195	13000	3900	6.50/20D	8.25/20	Her JXB	6–3⅝x4¼	263	5.4	164	68–2500	7–2½x10	Y	WG T9	4	Tim 53307H	SF	H	5.83–6.8	Tim 31000H	L4IHV	318	....	a	TX	56¾	8½x2¼x¼	T
† 12	25	2½–3½	1275	136	195	14500	4600	7.00/20D	9.00/20	Her JXC	6–3¾x4¼	282	5.4	176	73–2500	7–2½x10	Y	Cla 185F	5	Tim 54411H	SF	H	5.83–6.8	Tim 31000H	L4IHV	344	....	a	TX	56¾	8½x2¼x¼	T
† 13	28	2½–3½	1445	136	195	15500	4800	7.00/20D	9.00/20	Her JXC	6–3¾x4¼	282	5.4	176	73–2500	7–2½x10	Y	Cla 200V	5	Tim 56411H	SF	H	6.16–7.4	Tim 31000H	L4IHV	380	....	a	FD	56¾	8½x2¼x¼	T
† 14	29	3–4	1695	136	195	16500	4900	7.50/20D	9.00/20	Her JXD	6–4x4¼	320	5.6	204	84–2500	7–2½x10	Y	Cla 200V	5	Tim 56411H	SF	H	6.16–7.4	Tim 32501H	L4IHV	380	....	a	FD	56¾	8½x2¼x¼	T
† 15	40	4–5	2590	157	219	20000	6550	9.00/20D	10.50/20	Wau 6MK	6–4½x4¾	381	6.1	259	88–2400	7–2⅝x12½	Y	Cla 270V	5	Tim 58205H	SF	H	5.57–7.8	Tim 33000H	L4IHV	380	....	a	FD	56¾	10x3¼x¼	T
† 16	.....40DR	4–5	2715	157	219	20000	6550	9.00/20D	10.50/20	Wau 6MK	6–4½x4¾	381	6.1	259	88–2400	7–2⅝x12½	Y	Cla 270V	5	Wis 72200H	2F	H	5.61–7.27	Tim 33000H	L4IHV	380	....	a	FD	56¾	10x3¼x¼	T
† 17	.....T10B	3½–4	2550	165	230	19000	6550	34x7D	9.75/20	Con 18R	6–4x4½	339	4.2	212	80–2200	7–2¾x13	Y	Own 7784	4	Tim 58205H	SF	R	5.57–7.8	Own 7738	L4IHV	380	....	a	TI	79	7½x3½x½	C
† 18	.....T10W	3½–4	2685	165	230	19000	6550	34x7D	9.75/20	Con 18R	6–4x4½	339	4.2	212	80–2200	7–2¾x13	Y	Own 7784	4	Tim 65200H	WF	R	6.75–8.75	Own 7738	L4IHV	380	....	a	TI	79	7½x3½x½	C
† 19	50	5–6	3195	157	219	24000	7150	9.00/20D	10.50/20	Wau 6MZ	6–4¼x4¾	404	6.0	274	93–2400	7–2⅝ 12½	Y	Cla 270V	5	Tim 57533H	2F	R	7.09–9.41	Tim 35000H	L4IHV	466	....	a	FD	82	10x3¼x¼	T
20	.....C7–C7W	6–7½	4710	195	249	29000	9550	9.75/20D	10.50/24	Wau 6SRK	6–4⅝x5½	517	4.6	330	110–2200	7–3x13⅞	Y	Cla B 710	5	Tim 76736H	w/2F	R	7.35–10.2	Tim 36020H	L4IHV	512	....	a	TD	102	7⅝x3½x¼	P
21	.....C8–C8W	6–7½	5120	195	249	29000	9650	9.75/20D	10.50/24	Wau 6SRK	6–4⅝x5½	517	4.6	330	110–2200	7–3x13⅞	Y	Cla B 710	5	Tim 76736W	w/2F	R	7.35–10.2	Tim 36020W	Ws4IA	609	....	a	TD	102	7⅝x3½x¼	P
22	...X8RDR-X8R	7½	4735	162	186	30000	10475	40x8D	10.50/24	Wau 6SRK	6–4⅝x5½	517	4.6	330	110–2200	7–3x13⅞	Y	Cla B 710	5	Tim 68702DP	w/2F	R	8.9–11.14	Own 5008	T2IMV	458	....	a	RI	87	9½x3½x½	C
23	Ford.....51	1½	500	131	131	.....	3220	6.00/20†S	32x7	Own	8–3 x3¾	221	5.3	138	80–3800	3–2x5⅝	N	Own	4	Own	FS	U	5.14–6.6	Own	O4IM	350	489	a	2I	57¾	7x2¾x	C
24	51	1½	525	157	157	.....	3297	6.00/20†S	32x7	Own	8–3 x3¾	221	5.3	138	80–3800	3–2x5⅝	N	Own	4	Own	FS	U	5.14–6.6	Own	O4IM	350	489	a	2I	83¼	7x2¾x	C
25	.....Commercial	.....	360	112	112	.....	1966	6.00/16S	6.50/16	Own	8–3 x3¾	221	5.3	138	80–3800	3–2x5⅝	N	Own	3	Own	S¾	U	3.54–4.11	Own	O4IM	186	293	a	4I	38¼	5½x2x.11	
† 26	Gen. Mot.(N) T-14	½	425	126	126	.....	2300	6.00/16S	7.60/15	Own 213	6–3 x4½	213	6.0	152	84–3500	4–2 rx6	N	Own	3	Own	S½	U	** 4.11	Own	O4IH	168	242	c	2I	46½	5 x2¼x	C
† 27	.....T-16	1½–3	525	131	157	.....	3250	6.00/20†S	7.50/20	Own 213	6–3 x4½	213	6.0	152	84–3500	4–2 rx6	N	Own	4	Own	SF	H	5.67–6.20	Own	O4IH	337	478	C	2I	51½	7x2⅜x	C
† 28	.....T-16H	1½–3½	645	139	181	.....	3400	6.00/20†S	7.50/20	Own 213	6–3 x4½	213	6.0	152	84–3500	4–2 rx6	N	Own	4	Own	SF	H	5.67–6.60	Own	O4IH	337	478	C	2I	60	7 x2⅜x¼	T
† 29	.....T-18	1½–4	815	136	178	.....	3800	30x5†S	7.50/20	Own 239	6–3 x4⅝	238	5.1	170	81–3000	4–2⅝x7	Y	Own	4	Own	SF	H	5.67–6.60	Own	L4IH	311	482	ca	TX	60	7⅞x3x	T
† 30	.....T-18H	1½–4½	895	136	178	.....	4060	6.50/20D	34x7	Own 239	6–3 x4⅝	238	5.1	170	81–3000	4–2⅝x7	Y	Own	4	Own	SF	H	5.83–6.80	Own	L4IH	342	533	ca	TX	60	7⅞x3x	T
† 31	.....T-23	2–4½	1285	136	196	.....	4670	7.00/20D	34x7	Own 257	6–3 x4⅝	257	5.0	190	88–2800	4–2⅝x7	Y	Own	4	Own	SF	H	5.83–6.80	Own	L4IHV	342	533	ca	TX	60	8x3x¼	T
† 32	.....T-23H	2–5	1515	136	196	.....	5150	7.50/20D	9.00/20	Own 257	6–3 x4⅝	257	5.0	190	88–2800	4–2⅝x7	Y	Own	4	Own	SF	H	5.63–7.20	Own	L4IHV	386	612	ca	TX	60	8x3x¼	T
† 33	.....T-33	2½–6	1785	136	196	.....	5510	7.50/20D	9.75/20	Own 286	6–3⅝x4⅝	286	4.9	205	90–2600	4–2⅝x7	Y	Own	4	Own	SF	H	5.63–7.20	Own	L4IHV	389	662	a	TX	60	8½x3½x¼	T
† 34	.....T-33H	2½–6½	2135	136	196	.....	6260	8.25/20D	10.50/20	Own 286	6–3⅝x4⅝	286	4.9	205	90–2600	4–2⅝x7	Y	Own	4	Own	SF	H	6.43–7.16	Own	L4IHV	480	766	a	TX	60	8½x3½x¼	T
† 35	.....T-46	3½–7	2485	136	196	.....	6930	8.25/20D	10.50/20	Own 331	6–3¾x5	331	4.7	230	94–2500	4–2½x8	Y	Own	5	Own	SF	R	6.43–7.16	Own	L4IHV	528	846	a	TX	60	9 x3½x	T
36	.....T-61	4–8	4835	136	196	.....	8390	9.00/20D	10.50/24	Own 400	6–4⅛x5	400	4.7	296	110–2300	4–2.7x8	Y	Own	5	Own	2F	R	7.38–9.41	Own	TWs41A	581	916	a	TX	60	9 x3½x	TL
37	.....T-61H	5–10	5175	136	196	.....	8995	9.00/20D	11.25/24	Own 400	6–4⅛x5	400	4.7	296	110–2300	4–2.7x8	Y	Own	5	Own	2F	R	7.34–9.19	Own	TWs41A	581	916	a	TX	60	9 x3½x	TL
38	....(c.o.e.) T-73	3–4½	2785	94	142	.....	6160	32x6D	34x7	Own 257	6–3⅞x4⅝	257	5.1	190	80–2500	4–2⅝x7	Y	Own	4	Own	SF	H	5.63–7.40	Own	L4IHV	393	663	a	TX	72	8x3½x¼	C
39	....(c.o.e.) T-73H	4–6	2940	94	142	.....	6320	32x6D	9.00/20	Own 257	6–3⅞x4⅝	257	5.1	190	80–2500	4–2⅝x7	Y	Own	4	Own	SF	H	6.50–7.20	Own	L4IHV	437	742	a	TX	72	8x3½x¼	C
40	....(c.o.e.) T-74	4–6	3695	94	142	.....	7185	34x7D	9.75/20	Own 331	6–3¾x5	331	4.7	230	94–2500	4–2½x8	Y	Own	4	Own	SF	R	6.50–7.20	Own	L4IHV	437	742	a	TX	72	8x3½x¼	C
41	....(c.o.e.) T-74H	5–7	4150	94	142	.....	7810	34x7D	9.75/22	Own 331	6–3¾x5	331	4.7	230	94–2500	4–2½x8	Y	Own	4	Own	2F	R	8.50–9.43	Own	L4IHV	528	846	a	TX	72	8x3½x¼	C
42	....(c.o.e.) T-75	5–7½	5880	94	160	.....	9350	9.00/20D	10.50/20	Own 400	6–4⅛x5	400	4.7	296	110–2300	4–2.7x8	Y	Own	5	Own	2F	R	7.38–9.41	Own	Ws4IA	581	920	a	TX	72	9 x4x	C
43	....(c.o.e.) T-78	7–10	6480	94	160	.....	10325	9.75/20D	40x10	Own 450	6–4⅜x5	450	4.7	340	126–2300	4–2.7x8	Y	Own	5	Own	2F	R	7.34–9.19	Own	Ws4IA	581	920	a	TX	72	9 x4x	C
44	Gramm.....15A	1½–2	565	136	190	9500	3000	6.00/20S	7.50/20	Her QXB3	6–3¼x4½	205	5.5	135	61–3300	7–2½x10	N	WG T9	4	Cla R650	SF	H	5.62–6.28	Cla F180	L4IH	226	....	a	TX	55	7 x2¾x	T
45	.....25A	2–3	595	136	190	11000	3200	6.00/20S	7.50/20	Her QXB3	6–3¼x4½	205	5.5	135	61–3300	7–2½x10	N	WG T9	4	Cla B373	SF	H	5.1–6.8	Cla F180	L4IH	249	....	a	TX	55	7 x2¾x	T
46	.....30A	2–3	625	136	190	11000	3300	6.00/20S	7.50/20	Her JXA	6–3⅝x4½	228	5.3	148	63–2700	7–2½x10	N	WG T9	4	Cla B373	SF	H	5.1–6.37	Cla F266	L4IH	261	....	a	TX	55	7 x2¾x	T
47	.....40A	2½–3½	745	136	190	13000	3650	6.00/20S	8.25/20	Her JXB	6–3⅝x4¼	263	5.4	164	68–2800	7–2½x10	N	WG T9	4	Tim 53300	SF	H	4.57–6.6	Cla F266	L4IH	277	....	a	TX	55	7 x2¾x	T
48	.....45A	2½–4	845	136	190	14000	4000	6.00/20S	34x7	Her JXB	6–3⅝x4¼	263	5.4	164	68–2800	7–2½x10	N	WG T9	4	Tim 54411	SF	H	4.12–6.8	Cla F266	L4IH	361	....	a	TX	55	7 x2¾x	T
49	.....50A	3–4	1095	136	190	15000	4600	6.50/20D	34x7	Her JXB	6–3⅝x4¼	263	5.4	164	68–2800	7–2½x10	N	WG T9	4	Tim 54411	SF	H	4.12–6.8	Tim 31000	L4IHV	388	....	a	TX	55	10x2¾x	P
50	.....55A	3–4½	1195	136	190	15000	4700	6.50/20D	34x7	Her JXC	6–3¾x4¼	282	5.3	176	73–2800	7–2½x10	N	Cla 185F	5	Tim 54411	SF	H	4.12–6.8	Tim 31000	L4IHV	388	....	a	TX	55	10x2¾x	P
51	.....70A	3½–4½	1425	136	190	17000	5200	7.00/20D	9.75/20	Her JXC	6–3¾x4¼	282	5.3	176	73–2800	7–2½x10	N	Cla 200V	5	Tim 56410	SF	H	4.44–7.4	Tim 31000	L4IHV	388	....	a	TX	55	10x2¾x	P
52	.....75A	3½–5	1595	136	190	18000	5300	7.00/20D	9.75/20	Her JXD	6–4x4¼	320	5.6	204	84–2800	7–2½x10	N	Cla 200V	5	Tim 56410	SF	H	4.44–7.4	Tim 31000	L4IHV	388	....	a	TX	55	10x2¾x	P
53	.....85A	4–5½	1795	136	190	20000	5700	7.50/20D	10.50/20	Her JXD	6–4x4½	320	5.6	204	84–2800	7–2½x10	N	Cla 200V	5	Tim 58200	SF	H	5.25–7.8	Tim 32500	L4IHV	436	....	a	TX	55	10x2¾x	P
54	(D).....ED	3–4½	3995	160	224	20700	6100	8.25/20D	9.75/20	Bud D6-415	6–4x5½	415	17.	264	93–2000	7–3x11½	Y	Cla R900	5	Tim 58200H	BF	H	4.55*7.8	Tim 32500	L4IHV	375	....	a	TD	74¼	12x2½x¼	TP
55	.....EY190	3	3595	190	190	16000	6750	7.50/20D	9.00/20	Con 20R	4½x4¾	380	4.7	238	88–2400	7–2¾x13	Y	Co Rus4	4	Tim 58200H	BF	H	4.55*7.8	Tim 32500	L4IHV	375	....	a	TD	90	8¾x3¼x¼	LDX
56	.....GY	4	4345	190	210	18000	7700	8.25/20D	9.75/20	Con 21R	6–4⅜x4¾	428	4.6	268	100–2200	7–2¾x13	Y	Co Rus	4	Wis 69317H	2F	H	5.9 *8.4	Tim 32500	L4IHV	375	....	a	TD	119	8¾x3¼x¼	LDX
57	.....G	4–6	3695	150	225	24000	7950	9.00/20D	10.50/20	Con 21R	6–4⅜x4¾	428	4.6	268	100–2200	7–2¾x13	Y	Cla R900	5	Wis 1237H	2F	H	5.75*8.9	Tim 33000	L4IHV	466	....	a	TD	67	12x2½x¼	TP
58	.....GF	4–6	5500	150	225	24000	9050	9.75/20D	10.50/20	Her HXC	6–5¼x6	779	4.5	505	143–1600	7–3½x17	N	BL 744	4	Wis 1237H	2F	H	4.29*7.2	Tim 33000	L4IHV	466	....	a	TD	67	12x2½x¼	TP
59	.....GW	5–7½	5175	157	240	28000	9500	9.00/20D	11.25/20	Con 21R	6–4⅜x4¾	428	4.1	268	100–2200	7–2¾x13	Y	Cla'R900	5	Wis 1627KW	2F	H	6.3 **8.0	Tim 27450	Ws4IA	576	....	a	TD	73⅛	12x2½x¼	TP
60	(D).....GWD	5–7½	6495	157	240	30000	10000	10.50/20D	11.25/20	Cum H Dle.	6–4⅞x6	672	17.	440	125–1800	7–3¼x16½	Y	BL 735	5	Wis 1737KW	2F	H	5.75*8.0	Tim 27450	Ws4IA	576	....	a	TD	73⅛	12x2½x¼	LDX
61	.....HY	5	6595	210	236	22000	10100	9.00/20D	9.75/20	Con 16H	6–4¼x5¾	611	4.1	382	127–2300	7–3x13	Y	Fu HU16	4	Wis12527KW	2F	H	4.00*8.0	Tim 27450	Ws4IA	576	....	a	TD	141½	8¾x3¼x¼	LDX
62	Grass-Premier..545	3–4	2400	130	176	18000	5575	7.50/20D	8.25/20	Wau 6BK	6–3¾x4¼	282	5.1	180	85–3200	7–2⅝x10¼	N	Fu 5A290	5	Tim 56200H	SF	R	6.16–7.4	Tim 31000H	L4IHV	328	353	A	TX	58	8x¼x3½	T
63	555	4–5	3600	130	Op	20000	6100	8.25/20D	9.00/20	Wau 6-110-3	6–4x4¾	358	5.2	254	110–2800	7–2⅝x12½	Y	Fu 5A380	5	Tim 58200H	SF	R	6.8–7.8	Tim 33000H	L4IHV	374	397	A	TD	58	9x¼x4	T
64	565	5–7	4400	136	Op	25000	8465	9.00/20D	9.75/20	Wau 6-110-3	6–4x4¾	358	5.2	254	110–2800	7–2⅝x12½	Y	Fu 5A380	5	Eat 2622	2F	R	8.05–9.43	Tim 35000H	L4IHV	398	396	A	TD	60	10x¼x4	T
65	575	7–10	5400	136	Op	30000	9450	9.75/20D	10.50/20	Wau 6-125-4	6–4⅝x5½	462	5.1	324	125–2600	7–3x12½	Y	Fu 5A53	5	Wis 1737	2F	R	8.05–9.15	Tim 35000H	L4IHV	453	412	A	TD	60	12x¼x4	T
66	Hahn.....HB-3	2	1245	134	Op	12000	3900	7.00/20D	32x6	Wau 6BK	6–3¾x4¼	282	5.1	190	82–2800	7–2⅝x10¼	N	WG T9	4	Cla B373	SF	H	** 5.66	Cla F266	L4IH	223	....	G	TX	Opt	5¼x2¼x¼	P
67	.....HB-4	2	1400	136	Op	14000	4500	7.50/20D	32x6	Wau 6BK	6–3¾x4¼	282	5.1	190	82–2800	7–2⅝x10¼	N	WG T9	4	Tim 53300H	SF	H	** 6.6	Tim 30000H	L4IH	269	....	G	TX	Opt	5¾x2¼x¼	P
68	.....HB-5	2½	1770	138	Op	18000	5400	8.25/20D	34x7	Wau 6BK	6–3¾x4¼	282	5.1	190	82–2800	7–2⅝x10¼	N	Fu MLU	4	Tim 54412H	SF	H	** 5.8	Tim 31000H	L4IH	355	....	G	TD	Opt	6x2½x¼	P
69	.....HB-6	3	1950	142	Op	20000	6050	9.00/20D	9.00/20	Wau 6BK	6–3¾x4¼	282	5.1	190	82–2800	7–2⅝x10¼	N	Fu 5B290	5	Tim 56410H	SF	H	** 5.14	Tim 31000H	L4IH	377	....	G	TD	Opt	6x2½x¼	P
70	250	3	2625	148	Op	22000	6300	9.00/20D	36x8	Wau 6MZ	6–4¼x4¾	404	4.6	255	90–2500	7–2⅝x12½	Y	Fu 5A380	5	Tim 56200H	SF	H	** 5.14	Tim 31000H	L4IH	390	....	G	TD	Opt	7x3x¼	P
71	300	3½	2820	150	Op	22000	6700	9.00/20D	9.75/20	Wau 6MZ	6–4¼x4¾	404	4.6	255	90–2500	7–2⅝x12½	Y	Fu 5A380	5	Tim 58205H	SF	H	** 6.8	Tim 33000H	L4IHV	660	....	G	TD	Opt	7x3x¼	P
72	.....HD-2	4	3010	154	Op	25000	7600	9.75/20D	9.75/20	Wau 6MZ	6–4¼x4¾	404	4.6	255	90–2500	7–2⅝x12½	Y	Fu 5A380	5	Tim 58205H	SF	H	** 6.8	Tim 33000H	L4IHV	660	....	G	TD	Opt	7x3x¼	P
73	.....HD-3	4–6	3375	162	Op	26000	9050	9.75/20D	9.75/20	Wau 6MZ	6–4¼x4¾	404	4.6	255	90–2500	7–2⅝x12½	Y	Fu 5A380	5	Tim 58205H	SF	R	** 6.8	Tim 35000H	L4IHV	660	....	G	TD	Opt	7x3x¼	P
74	440	5–6	4700	165	Op	26000	9200	9.75/20D	10.50/20	Wau 6SRK	6–4⅝x5½	517	4.6	335	110–2000	7–3x13⅞	Y	Fu 5A530	5	Wis 1337BH	2F	R	** 7.2	Tim 35000H	L4IHV	760	....	G	TD	Opt	10x3x	P
75	Hendrickson 158A	2½	1760	89	210	17000	5400	8.25/20D	9.00/20	Wau 6BK	6–3¾x4¼	282	5.1	180	85–3200	7–2⅝x10¼	Y	Cla R116	5	Cla B613	BF	H	5.66–6.87	Cla F320	L4IH	350	450	a	DX	68	8x3x	C
76	.....(12) 198	3	3100	100	225	19000	6500	9.00/20D	9.75/20	Wau 6-110	6–4x4¾	358	4.6	254	110–2800	7–2⅝x12½	Y	Fu 5A38	5	Tim 58200H	SF	R	5.28–7.45	Tim 35000H	L4IHV	500	658	a	TD	Opt	8x3x	C
77	248	4	3600	100	225	24000	8200	9.75/20D	10.50/22	Wau 6-110	6–4x4¾	358	4.6	254	110–2800	7–2⅝x12¼	Y	Fu 5A38	5	Tim 75733H	w/2	R	7.33–9.45	Tim 35000H	L4IHV	717	862	a	TD	Opt	8x3x	C
78	328	5	4200	100	250	32000	10600	9.75/20D	10.50/24	Wau 125	6–4⅝x5½	462	4.6	324	125–2600	7–3x13⅞	Y	Fu 5A53	5	Tim 76733H	w/2	R	6.02–9.2	Tim 27450	L4IHV	717	862	a	TD	Opt	8x3x	C

† Rear 32 x 6

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† 79	Hug.....12D	1½	1650	118	130	12000	4550	7.50/20D	9.00/20	Wau 6BL	6–3½x4¼	245	5.4	165	72–3000	7–2⅜x10¼	Y	Fu 5B290	5	Cla B642	SF	H	6.42*7.16	Cla F308	L4IH	342	578	a	T	51¼	8x3x¼	T
	.....24D	2½	1815	126	156	10500	4100	6.50/20D	34x7	Wau 6BL	6–3½x4¼	245	5.4	165	72–3000	7–2⅜x10¼	Y	Cla B363	4	Cla B377	SF	H	5.10*6.37	Cla F308	L4IH	262	438	a	T	69¼	8x3x¼	T

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimensions (Std. W. B.)	FRAME: Side Rail Dimensions	Type
♦ 1	Mack (a) .....BG	1½–3	3000	156	192	.....	6500	32x6D	34x7	Own BG	6–3⅝x5	310	5.4	202	90–3000	7–2⅝x10¹¹⁄₁₆	Y	Own BF	5	Own BG	SF	H	4.90–6.71	Own BG	O4IMV	427	704	a	FX	72½	7⅞x3x⅞	T
♦ 2	.....(e.b.s.) EC	1½–3	3350	126	162	.....	7200	32x6	9.00/20	Own BG	6–3⅝x5	310	5.4	202	90–3000	7–2⅝x10¹¹⁄₁₆	Y	Own BF	5	Own BG	SF	H	4.90–6.71	Own EC	O4IMV	427	704	a	TX	102	8⅛x3x⅞	T
3	.....BF	2–3½	3750	174	210	.....	7575	8.25/20D	9.00/20	Own CU	6–3⅞x5	354	5.4	237	100–2800	7–2⅝x10¹¹⁄₁₆	Y	Own BF	5	Own BF	SF	H	5.43–6.83	Own BF	O4IMV	431	709	a	FX	102½	8½x3x¼	T
4	.....BF	2½–4	4000	174	210	.....	8100	8.25/20D	9.75/20	Own CU	6–3⅞x5	354	5.4	237	100–2800	7–2⅝x10¹¹⁄₁₆	Y	Own BF	5	Own BF	2F	H	6.54–8 92	Own BF	O4IMV	431	709	a	FX	102½	8½x3x¼	T
♦ 5	.....(e.b.s.) EB	2–3½	3900	126	162	.....	7375	8.25/20D	9.00/20	Own CU	6–3⅞x5	354	5.4	237	100–2800	7–2⅝x10¹¹⁄₁₆	Y	Own BF	5	Own BF	SF	H	5.93–6.83	Own EB	O4IMV	437	709	a	TX	102	8½x3x¼	T
♦ 6	Mack..(e.b.s.) EB	2½–4	4150	126	162	.....	7900	8.25/20D	9.75/20	Own CU	6–3⅞x5	354	5.4	237	100–2800	7–2⅝x10¹¹⁄₁₆	Y	Own BF	5	Own BF	2F	H	6.54–8.92	Own EB	O4IMV	437	709	a	TX	102	8½x3x¼	T
7	.....AB	3–5	4000	174	210	.....	8050	34x7D	9.75/20	Own AB	4–4¼x5	284	4.8	192	65–2100	3–3x8	Y	Own AB	4	Own AB	CD	R	6.23–13.1	Own AB	O4IMV	563	920	a	FX	102½	8½x3x¼	T
8	.....AB	3–5	4200	174	210	.....	8450	34x7D	9.75/20	Own AB	4–4¼x5	284	4.8	192	65–2100	3–3x8	Y	Own AB	4	Own AB	2F	H	6.54–8.92	Own AB	O4IMV	563	920	a	FX	102½	8½x3x¼	T
9	.....BM	3–5	4700	175	211	.....	9175	9.00/20D	9.75/22	Own CE	6–4x5½	415	5.2	270	108–2400	7–3x12⅛	Y	Own BX	5	Own BM	2F	H	6.54–8.92	Own BM	O4IMV	562	920	a	FX	102½	8½x3x¼	T
♦ 10	..... (e.b.s.) CH	3½–5½	4950	126	180	.....	10225	9.00/20D	9.75/22	Own CE	6–4x5½	415	5.2	270	108–2400	7–3x12⅛	Y	Own BX	5	Own BM	2F	H	6.54–8.92	Own CH	O4IMV	562	920	a	FX	102	8½x3x¼	T
11	.....BX	4–6	6250	189	225	.....	11200	9.75/22D	10.50/24	Own CF	6–4¼x5½	468	5.2	310	118–2400	7–3x12⅛	Y	Own BX	5	Own BX	CD	R	6.0–9 67	Own BX	O4IMV	649	976	a	FX	120	9½x3x¼	T
12	.....BX	4–6	5600	189	225	.....	10925	9.75/22D	9.75/24	Own CF	6–4¼x5½	468	5.2	310	118–2400	7–3x12⅛	Y	Own BX	5	Own BX	2F	H	6.54–8.92	Own BX	O4IMV	619	976	a	FX	120	9½x3x¼	T
♦ 13	.....(e.b.s.) CJ	4½–7	5750	126	180	.....	10750	9.75/22D	9.75/24	Own CF	6–4¼x5½	468	5.2	310	118–2400	7–3x12⅛	Y	Own BX	5	Own BX	2F	H	6.54–8.92	Own CJ	O4IMV	619	976	a	FX	102	9½x3x¼	T
14	.....BQ	6–8	6800	194	230	.....	12500	10.50/22D	11.25/24	Own BQ	6–4¾x5¾	611	4.8	390	125–2200	4–3½x10⅛	Y	Own AK	4	Own BQ	2F	H	7.43–10.0	Own BQ	O4IMV	781	1194	a	FX	120	10½x3x¼	T
15	.....AK	5–7½	5250	174	228	.....	11100	36x5D	10.50/24	Own AC	4–5x6	471	3.9	300	74–1600	3–3x10½	Y	Own AK	4	Own AK	2F	H	7.43–10.0	Own AK	O4IMV	724	1106	a	FX	102	8¾x3x⅞	T
16	.....AK	6–8	6800	186	240	.....	12700	10.50/22D	11.25/24	Own BQ	6–4¾x5¾	611	4.8	390	125–2200	4–3½x10⅛	Y	Own AK	4	Own BQ	2F	H	7.43–10.0	Own AK	O4IA	781	1194	a	FX	102	8¾x3x⅞	T
17	.....AC	7–9	6750	192	228	.....	13425	36x6†D	13.50/24	Own AC	4–5x6	471	3.9	300	74–1600	3–3x10½	Y	Own AC	4	Own AC	CD	R	8.95–11.5	Own AK	O4IMV	781	1194	a	T	120	8¾x3x⅞	T
18	.....AC	7–9	7500	186	240	.....	14200	10.50/24D	13.50/24	Own BQ	6–4½x5¾	611	4.8	390	125–2200	4–3½x10⅛	Y	Own AC	4	Own AC	CD	R	8.95–11.5	Own AK	O4IA	781	1194	a	T	102	8¾x3x⅞	T
19	.....AP	7½–10	8500	191	216	.....	14500	36x7††D	13.50/24	Own AP	6–5x6	707	4.8	427	138–1900	4–3½x11⅛	Y	Own AC	4	Own AC	CD	R	8.95–11.5	Own AK	O4IA	781	1194	a	T	102	8¾x3x⅞	T
20	Menominee...A-15	1½	1485	144	160	8750	3750	7.00/20S	7.00/20S	Wau TL	6–3⅛x4⅛	255	5.0	170	68–2600	4–2⅜x7⅛	Y	Fu MKU10	4	Cla B373	SF	R	4.66–5.8	Cla 212	L4IHV	377	....	P	TX	65	5½x3½x¼	C
21	.....DX-6	2½	2850	156	175	13760	5760	7.50/20S	7.50/20S	Wau 6-90	6–3⅝x4¾	255	5.4	182	90–3200	4–2⅝x7⅛	Y	BL 234	4	Wis 6617	2F	R	5.33–8.33	Shu 5532	L4IHV	580	....	G	TD	68	6x24x⅞	C
22	.....DN-6	3	3275	156	175	15200	6200	8.25/20D	8.25/20	Wau MK	6–4⅛x4¾	381	4.8	240	85–2500	7–2⅝x12½	Y	BL 524	4	Wis 8817	2F	R	6.2–10.5	Shu 5532	L4IHV	662	....	G	TD	68	6x24x⅞	C
23	.....A30	3	3275	165	185	15035	7035	8.25/20D	8.25/20	Wau MK	6–4¼x4¾	381	4.8	240	85–2500	7–2⅝x12½	Y	BL 528	4	Tim 58206H	SF	R	5.25–7.8	Shu 5532	L4IHV	662	....	G	TD	86½	8x3x⅜	P
24	.....N-6	3½	3715	165	185	16800	6800	8.25/20D	8.25/20	Wau 6-110	6–4x4¾	358	5.2	254	110–2800	7–2⅞x10¾	Y	BL 524	4	Wis 8817	2F	R	6.2–10.5	Shu 5572	L4IHV	662	....	G	TD	85	8x2½x¼	C
25	.....JX-6	5	4650	175	190	20200	7200	9.00/20D	9.00/20	Wau 6-125	6–4⅛x5½	462	5.1	324	125–2600	7–3x13⅞	Y	BL 724	4	Wis 1458	2F	R	6.39–8.95	Shu 5572	L4IHV	770	....	G	TD	96	10x2½x¼	P
26	.....6W-8	8	5800	185	200	28600	11000	8.25/20D	8.25/20	Wau 6-125	6–4⅛x5½	462	5.1	324	125–2600	7–3x13⅞	Y	BL 724	4	Wis 8D210	2F	R	6.53–9.25	Shu 5582B	L6IHV	1095	....	G	TD	Opt	10x2½x¼	P
♦ 27	Moreland...R–125	2–3	1450	156	168	12500	4400	6.50/20D	7.50/20	Her JXBM	6–3⅛x4¼	263	4.7	182	79–2900	7–2½x10¹¹⁄₁₆	N	War T–9	4	Tim 53413	BF	H	4.57–5.67	Tim 30000	L4IH	223	393	a	TX	81½	8x3¹¹⁄₁₆x¼	T
♦ 28	.....R–140	2½–3½	1550	156	168	14000	4750	7.00/20D	32x6	Her JXBM	6–3⅛x4¼	263	4.7	182	79–2900	7–2½x10¹¹⁄₁₆	N	War T–9	4	Tim 54411	BF	H	4.85–5.83	Tim 31000	L4IH	336	578	a	TX	81½	8x3¹¹⁄₁₆x¼	T
♦ 29	.....R–150	2½–3½	1680	168	180	15000	5050	7.00/20D	32x6	Her JXCM	6–3¾x4¾	282	4.7	197	85–2900	7–2½x10¹¹⁄₁₆	N	Spi 224	4	Tim 54411	BF	H	4.85–5.83	Tim 31000	L4IH	336	578	a	TD	93½	8x3¹¹⁄₁₆x¼	T
♦ 30	.....R–175	3–4	1880	168	180	17500	5300	7.50/20D	34x7	Her JXCM	6–3¾x4¾	282	4.7	197	85–2900	7–2½x10¹¹⁄₁₆	N	Spi 224	4	Tim 56400	BF	H	5.28–6.17	Tim 31000	L4IH	336	578	a	TD	93½	8x3¹¹⁄₁₆x¼	T
31	.....R–190	3½–4½	2175	180	180	19000	5800	8.25/20D	9.00/20	Her JXDM	6–4x4¼	320	4.7	224	95–2900	7–2½x10¹¹⁄₁₆	N	Spi 224	4	Tim 56400	BF	H	5.28–6.17	Tim 32501	L4IH	336	578	a	TD	105½	8x3¹¹⁄₁₆x¼	T
♦ 32	.....R–200	4–5	2495	180	180	20000	6300	8.25/20D	9.00/20	Her WXC3	6–4¼x4½	383	4.7	265	107–2800	7–2⅝x13¼	N	Spi 5241	4	Tim 56400	BF	H	5.28–6.17	Tim 32501	L4IH	336	578	a	TD	104	8x3¹¹⁄₁₆x¼	T
♦ 33	.....E–220	4½–5½	3075	180	202	22000	6550	9.00/20D	36x8	Her WXC3	6–4¼x4½	383	4.7	265	107–2800	7–2⅝x13¼	N	Spi 5241	4	Tim 58205	BF	H	5.25–6.14	Tim 35000	L4IHV	394	659	a	TD	103⅝	9x3x3x3x⅞	T
♦ 34	.....E–250	6T	3475	180	202	25000	7050	9.00/20D	9.75/20	Her WXC3	6–4¼x4½	383	4.7	265	107–2800	7–2⅝x13¼	N	Spi 5241	4	Tim 75733	2F	H	6.85–7.37	Tim 35100	L4IHV	483	867	a	TD	103⅝	9x3x3x3x⅞	T
♦ 35	.....H–300	7½T	4725	196	202	30000	9000	9.75/20D	42x9	Her RXB	6–4½x5¼	501	4.7	330	110–2200	7–3x12½	N	Spi 5241	4	Tim 76733	2F	R	6.86–7.89	Tim 26450	WAB	486	867	a	TD	115⅛	9x3x3x3x⅞	T
♦ 36	(D).....R–150D	2–3T	2890	168	180	15000	5800	7.00/20D	32x6	Her DJXB	6–3⅛x4½	250	....	180	74–2600	7–3	Y	Spi 224	4	Tim 54411	BF	H	4.85–5.83	Tim 31000	L4IH	336	578	a	TD	93½	8x3¹¹⁄₁₆x¼	T
♦ 37	(D).....R–175D	3–4T	3090	168	180	17500	6100	7.50/20D	34x7	Her DJXB	6–3⅛x4½	250	....	180	74–2600	7–3	Y	Spi 224	4	Tim 56400	BF	H	5.28–6.17	Tim 31000	L4IH	336	578	a	TD	93½	8x3¹¹⁄₁₆x¼	T
38	.....E–220D	4½–5½	5160	180	202	22000	7750	9.00/20D	36x8	Her DRXB	6–4⅜x5¼	474	....	350	125–2200	7–3x16⅜	Y	Spi 3241	4	Tim 58205	BF	H	5.25–6.14	Tim 35000	L4IHV	394	659	a	TD	103⅝	9x3x3x3x⅞	T
♦ 39	(D).....E–250D	6–7	5520	180	202	25000	8250	9.00/20D	9.75/20	Her DRXB	6–4⅜x5¼	474	....	350	125–2200	7–3x16⅜	Y	Spi 5241	4	Tim 75733	2F	H	6.85–7.37	Tim 35100	L4IHV	486	867	a	TD	103⅝	9x3x3x3x⅞	T
♦ 40	(D).....H–300D	7½T	6045	196	202	30000	9900	9.75/20D	42x9	Her DRXB	6–4¾x5¾	474	....	350	125–2200	7–3x16⅜	Y	Spi 5241	4	Tim 76733	2F	H	6.86–7.89	Tim 26450	WAB	486	867	a	TD	115⅛	9x3x3x3x⅞	T
♦ 41	(D).....T–420D	8–10	8000	212	220	42000	12800	9.75/24D	44x10	Her DHXB	6–5x6	707	4.5	530	176–1800	7–3½x7	Y	Spi 7241	4	Tim 78733	2F	H	** 8.90	Tim 27050	WAB	757	1050	a	TD	125½	11x3x3x⅞	T
♦ 42	.....H300CD	8	6345	208	220	30000	11000	9.75/20D	9.75/20	Cum HB	6–3⅞x6	672	17.	420	125–1800	7–4½	Y	.....	4	Tim 76733	2F	H	6.85–7	Tim 26450	WAB	486	867	A	TD	115½	9x3x3x3x⅞	T
♦ 43	.....TA420CD	10	8040	224	220	42000	14900	9.75/20D	9.75/20	Cum HB	6–3⅞x6	672	17.	420	125–1800	7–4½	Y	.....	4	Tim 79720	2F	H	**–8.9	Tim 27050	WAB	...	1354	A	TD	132½	11x3x3x⅞	T
44	Netco.....A	2–4	1800	157	190	15000	5500	7.50/20D	7.50/20	Wau BL	6–3⅛x4¼	245	5.0	165	73–3200	7–2⅝x10¼	Y	BL 224	4	Tim 54200H	SF	H	5.83–6.83	Tim 30020H	L4IHV	306	....	c	TD	Opt	6x3x¼	C
45	.....B	3–6	2400	160	200	20000	6500	8.25/20D	9.00/20	Wau BK	6–3¾x4¼	282	5.0	180	84–3200	7–2⅝x10¼	Y	BL 3341	4	Tim 56300H	SF	H	6.83–5.71	Tim 31000H	L4IHV	355	....	c	TD	Opt	6x3x¼	C
46	C	4–7	2800	160	200	22000	7300	9.00/20D	9.75/20	Wau MK	6–4¼x4¾	381	4.8	240	85–3200	7–2⅝x12½	Y	BL 334	4	Tim 58200H	SF	H	6.83–7.75	Tim 33000H	L4IHV	398	....	c	TD	Opt	7x3½x¼	C
47	.....E	5–8	3400	157	212	24000	8100	9.75/20D	9.75/20	Wau MZ	6–4¼x4¾	404	6.0	274	90–2400	7–2⅝x12½	Y	BL 334	4	Tim 55720H	WF	R	7.75–8.25	Tim 33000H	L4IHV	484	....	c	TD	Opt	7x3½x¼	C
48	.....J	6–9	4600	157	212	30000	9200	10.50/20D	10.50/20	Lyc AEC	8–3⅜x4¾	420	5.2	300	120–2800	5–2¼x12¾	Y	BL 534	4	Tim 76730	2F	R	8.50–9.25	Tim 35000H	Ws4IA	663	....	c	CD	Opt	9x3½x¼	C
49	.....K	7–10	4900	168	212	32000	9900	10.50/24D	10.50/24	Wau SRK	6–4⅝x5⅛	517	4.6	335	110–2300	7–3x13⅞	Y	BL 724	4	Tim 78720	2F	R	9.92–10.3	Tim 27450	Ws4IA	757	....	c	CD	Opt	9x3½x¼	C
♦ 50	Reo (4).....6AP	½	445	118	118	4500	.....	6.00/16S	6.50/16S	Own	6–3⅛x4⅜	209	5.4	145	70–2800	4–2¼x5⅛	N	WG T83	3	Spi	S½	H	4.27–4.90	Own	L4IH	172	264	C	TX	25½	6x2½x½	C
♦ 51	.....1A4–1C4	1–1½	595	139	166	9500	2750	6.00/20†S	7.00/20	Own	6–3⅛x4⅜	209	5.4	145	70–2800	4–2¼x5⅛	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IH	191	286	C	TX	57½	6½x2¾x½	C
♦ 52	.....1A4H–1C4H	1–1½	635	139	166	9500	2800	6.00/20†S	7.00/20	Own	6–3⅝x4¼	228	5.4	150	73–3000	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IH	191	286	C	TX	57½	6½x2¾x½	C
♦ 53	.....1B4–1D4	1½–2½	695	139	166	11500	3200	6.00/20†S	7.00/20	Own	6–3⅝x4¼	228	5.4	150	73–3000	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IH	246	366	C	TX	57½	7⅛x2⅝x½	C
♦ 54	.....1B4H–1D4H	1½–2½	775	139	166	11500	3300	6.00/20†S	7.50/20	Own	6–3⅝x4⅜	268	5.5	160	81–2800	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IH	246	366	C	TX	57½	7⅛x2⅝x½	C
♦ 55	.....1B4M	1½–2½	1025	139	166	11500	3900	6.50/20D	7.50/20	Own	6–3⅝x4¼	228	5.4	150	73–3000	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–5.83	Own	L4IHV	246	366	C	TX	...	7⅛x2⅝x½	C
♦ 56	....1B4R–1D4R	2–2½	761	139	166	12500	3353	6.00/20†S	7.50/20	Own	6–3¼x5	228	5.4	150	73–3300	7–2⅝x10⅝	..	Own	4	Own	8F	H	5.28–6.6	Own	L4IH	255	380	C	TX	57½	7⅛x2⅝x⅝	C
♦ 57	.....2B4–2D4	2–3	925	142	166	13500	3700	6.50/20D	8.25/20	Own	6–3¾x5	268	5.5	175	83–2800	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IH	289	438	a	TX	60½	7⅛x3¼	C
♦ 58	.....2D4M	2–3	1075	166	166	14500	4020	6.50/20D	8.25/20	Own	6–3⅜x4¼	228	5.4	150	73–3000	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IHV	289	438	C	TX	121	7½x3x¼	C
♦ 59	.....2D4MH	2–3½	1155	166	166	14500	4120	6.50/20D	8.25/20	Own	6–3⅜x5	268	5.5	160	81–2800	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IHV	289	438	C	TX	121	7½x3x¾	C
♦ 60	....2B4R–2D4R	2½–3	1044	142	166	14500	.....	7.00/20D	7.50/20	Own	6–3⅜x5	268	5.5	175	75–2800	7–2⅝x10⅝	..	Own	4	Own	SF	H	5.28–6.6	Own	L4IH	289	438	a	TX	60½	7⅛x3¼	C
61	.....2H5–2J5	2–4	1195	142	166	15000	4300	6.50/20D	8.25/20	Own	6–3⅝x5	268	5.5	178	83–2800	7–2⅝x10⅝	..	Cla	5	Own	2F	H	6.62–8.21	Own	L4IH	289	438	a	TX	60½	7⅛x3x⅞	C
62	...3H(3J,3K,3M)	3–5	2055	153	205	18500	5125	7.50/20D	9.00/20	Own	6–3¾x5	309	5.0	200	85–2800	7–2⅝x10⅝	..	Own	4	Own	8F	H	6.14–7.17	Own	L4IH	399	660	a	FD	68⅝	8⅞x1¼x3	C
63	3HR (3JR–3KR)	3½–5	2570	153	205	19500	.....	8.25/20D	9.00/20	Own	6–3⅝x5	309	5.0	200	85–2800	7–2⅝x10⅝	..	BL	5	Own	2F	H	** –8.5	Own	L4IH	399	660	a	FD	68⅝	8⅞x3¼x⅞	C
♦ 64	...4H,4J,4K,4M	4–6	3080	170	205	22000	6280	9.00/20D	9.75/20	Own	8–3⅜x5	358	5.51	230	110–2800	7–2⅝x12½	Y	BL	5	Own	2F	H	** –8.5	Own	L4IHV	399	660	a	FD	62⅜	10x3x¼	C
65	Schacht.....10B	1½	1095	124	172	11500	4350	6.50/20D	7.50/20	Her JXB	6–3⅝x4¼	263	5.4	164	68–2800	7–2½x10¹¹⁄₁₆	N	WG T9	4	Tim	BF	H	6.6–5.14	Tim	L4IH	254	380	G	TX	Opt	8x3x⅞	C
66	.....12B	2	1295	132	177	12200	4900	32x6D	32x6	Her JXB	6–3⅝x4¼	263	5.4	164	68–2800	7–2½x10¹¹⁄₁₆	N	Own	4	Tim	SF	H	6.2–5.66	Tim	L4IH	290	380	G	TX	Opt	8x3x⅞	C
67	.....15B	2½–3½	1495	126	172	13000	4580	7.50/20D	8.25/20	Her JXC	6–3¾x4¼	282	5.35	176	73–2800	7–2½x10¹¹⁄₁₆	N	Fu 5A29	5	Tim	BF	H	5.83–6.8	Tim	L4IHV	312	527	G	TX	Opt	8x3x⅞	C
68	.....18B	2½–4	1895	124	175	15000	5200	8.25/20D	8.25/20	Her JXD	6–4x4¼	320	5.3	204	84–2800	7–2½x10¹¹⁄₁₆	Y	Fu 5A29	5	Tim	BF	R	5.83–6.8	Tim	L4IHV	312	527	G	TX	Opt	8x3x⅞	C
69	.....20B	3–4½	2095	124	188	17500	5400	8.25/20D	9.00/20	Her JXD	6–4x4¼	320	5.3	204	84–2800	7–2½x10¹¹⁄₁₆	Y	Fu 5A29	5	Tim	BF	R	7.4–5.71	Tim	L4IHV	342	578	G	TX	Opt	8x3x⅞	C
70	.....25B	3½–5	2595	146	199	19500	5750	8.25/20D	9.00/20	Her WXC2	6–4⅛x4½	360	4.7	238	85–2400	7–2⅝x13½	Y	Fu 5A38	5	Tim	BF	R	7.4–5.71	Tim	L4IHV	342	578	G	TX	Opt	8x3x⅞	C
71	.....28B	4–5½	2895	146	199	23000	6600	9.00/20D	9.75/20	Her WXC3	6–4¼x4½	383	4.4	265	106–2800	7–2⅝x13¼	Y	Fu 5A38	5	Tim	BF	R	7.8–6.14	Tim	L4IHV	435	758	G	TD	Opt	8x3x¼	P
72	.....35HA	5–7	3725	146	227	24000	7400	9.75/20D	9.75/20	Her WXC2	6–4¼x4½	360	4.7	238	85–2400	7–2½x13¼	Y	Fu 5–A–38	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	8½x3x⅞	P
73	.....40H	5–7	4295	156	239	25500	7600	9.75/20D	9.75/20	Her YXC	6–4⅜x4¾	428	4.4	280	93–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	8½x3x⅞	P
74	.....40HB	7–9	4695	156	239	29500	7750	10.50/20D	10.50/20	Her YXC	6–4⅜x4¾	428	4.4	280	93–2200	7–3x15	Y	Fu 5–A–53	5	Wis	2F	R	8.15–10.2	Shu	L4IHV	556	906	G	TD	Opt	8½x3x⅞	P
75	.....66HA	8–11	5895	154	251	35000	9820	10.50/24D	10.50/24	Her RXC	6–4⅝x5¼	529	4.9	355	115–2200	7–3x15	Y	Fu 5–A–53	5	Wis	2F	R	8.15–10.2	Shu	Ws4IA	636	851	G	TD	Opt	8½x3x⅞	P
76	.....(T) TRD	10	4150	150	174	35000	7100	9.00/20D	9.00/20	Her YXC	6–4¾x4¼	428	4.4	280	93–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	7x3x¼	P
77	.....(T) TRDA	12	4350	150	174	39000	7226	9.75/20D	9.75/20	Her YXC3	6–4⅝x4¾	478	4.4	318	103–2200	7–3x15	Y	Fu 5–A–53	5	Own	2F	R	7.14–8.94	Shu	L4IHV	507	768	H	TD	Opt	7x3x¼	P
78	.....(T) TRDB	15	4595	150	174	45000	7236	9.75/20D	9.75/20	Her RXC	6–4⅝x5¼	529	4	355	115–2200	7–3x15	Y	Fu 5–A–53	5	Wis	2F	R	7.14–8.94	Shu	L4IHV	507	780	H	TD	Opt	7x3x¼	P
79	Ster. (c) FB50 De L	2–2½	1905	177	207	13000	4900	7.00/20D	8.25/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	N	WG T9	4	Own	SF	R	4.86–6.6	Tim 33000H	L4IH	256	616	P	TX	91	10x3¼x¼	L
80	..(c) FB60 De L	2½–3	2055	177	207	15000	5150	7.00/20D	8.25/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	N	Own UC12	4	Own	SF	R	4.13–6.8	Tim 33000H	L4IHV	328	672	a	TX	91	10x3¼x¼	L

† Rear 32 x 6 †† Rear 40 x 8.

81	(b, c) FB70 De L	3–4	2305	177	207	17000	5475	7.50/20D	9.00/20	Wau 6BK	6–3¼x4¼	282	5.4	185	84–3200	7–2½x10¼	N	Own UC6	4	Own	SF	R	5.29–7.4	Tim 33000H	L4IHV	328	754	a	TX	91	10x3¼x¼	L
82	..... (b) FB80	3½–4½	2015	177	207	22000	6525	8.25/20D	9.75/20	Wau 6MK	6–4⅛x4¾	381	6.1	258

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Main Bearings: Number, Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	Forward Spd's	REAR AXLE: Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME: Side Rail Dimensions	Type
1	Coleman.....E52	2½	3800	120	144	12800	7200	9.00/24S	9.00/24	Bud K393	6-4¼x4½	393	4.9	260	103-2600	7-3x11½	Y	Fu RU 16	4	Wis CR15	2F	H	4.66-8.05	Wis CF15	W2/4IM	440	476	p	TD	78	10x2½x⅞	B
2	.....E53	3½	5300	130	180	18900	8000	9.75/24S	9.75/24	Bud K428	6-4⅝x4¾	428	4.7	280	107-2600	7-3x11½	Y	Fu MRU16	4	Wis CR26	2F	H	8.33-9.6	Wis CF25	W2/4IM	452	476	p	TD	89	12x2½x¾	B
3	.....E54	4-5	5600	130	180	20400	8800	10.50/24S	10.50/24	Bud L468	6-4¼x5½	468	4.8	295	108-2200	7-3x11½	Y	Fu MRU16	4	Wis CR30	2F	H	6.6-9.6	Wis CF30	W2/4IM	452	476	p	TD	89	12x2½x1⅛	B
4	.....E55	5	6150	130	180	23000	9600	11.25/24S	11.25/24	Bud L525	6-4½x5½	525	4.9	336	114-2200	7-3x11½	Y	Fu MRU16	4	Wis CR30	2F	H	6.6-9.6	Wis CF30	W2/4IM	452	476	p	TD	89	12x2½x1⅛	B
5	.....E55S	5-6	7200	144	180	24500	10600	11.25/24S	11.25/24	Bud L525	6-4½x5½	525	4.9	336	114-2200	7-3x11½	Y	Fu MHU16	4	Wis CR122	2F	H	7.69-9.54	Wis CF122	W2/4IM	502	530	G	TD	105	12x2⅝x1¼	B
6	.....E56	6-7½	7800	144	180	29800	11600	10.50/24D	10.50/24	Bud GF6	6-4¾x6	638	4.3	410	126-1850	4-3x10	Y	Fu MHU	4	Wis CR122	2F	H	7.69-9.54	Wis CF122	W2/4IM	502	530	G	TD	105	12x2⅝x1¼	B
7	.....E57	7½-10	9700	144	180	32000	12400	11.25/24D	11.25/24	Ste LT6	6-5¼x6	779	4.3	475	170-1800	7-3x13½	Y	BL 714	4	Wis CR122	2F	H	7.69-9.54	Wis CF122	O2/4IA	502	530	G	TD	105	16x3x1¼	B
♦ 8	Corbitt.....F12	1½-2	2375	143	180	.....	4420	6.50/20D	7.50/20	Wau 6BL	6-3½x3¾	245	5.4	162	72-3000	7-2⅝x10¼	N	WG T9	4	Tim 53615H	SF	H	5.14-6.6	Wis F30B	L4IH	247	329	a	TX	Opt	6½x2¾x1¼	T
♦ 9	.....F14	2-2½	3200	145	180	.....	5060	7.50/20D	8.25/20	Wau 6BK	6-3¾x4¼	282	5.4	190	80-2800	7-2⅝x10¼	N	Cla B116	4	Tim 54400H	SF	H	5.8-6.8	Wis F544B	L4IH	257	438	a	TX	Opt	7x3x1¼	
♦ 10	.....F18	2½-4	4500	155	185	.....	5730	8.25/20D	9.00/20	Wau 6MK	6-4⅛x4¾	381	4.8	240	85-2400	7-2⅝x12½	N	Fu MGU	4	Wis 5002L	2F	H	6.66-8.16	Wis F501H	L4IH	335	782	a	TD	Opt	9¾x2½x1¼	T
♦ 11	.....F23	3-5	5500	160	185	.....	8100	9.00/20D	9.75/22	Wau 6SRL	6-4⅜x5½	462	4.5	300	100-2200	7-3x13⅞	N	Fu 5A53	5	Wis 72000L	2F	H	5.61-7.27	Wis F213	L4IHV	534	870	a	TD	Opt	9¾x2½x1¼	T
♦ 12	.....F27	4-7	10000	170	210	.....	9200	9.75/20D	10.50/22	Wau 6SRK	6-4⅜x5½	517	4.6	330	110-2200	7-3x13⅞	N	Fu 5A53	5	Wis 1337H	2F	H	6.85-9.41	Wis F313H	L4IHV	625	974	a	TD	Opt	9¾x2½x1¼	T
♦ 13	.....F35	6-10	10000	185	210	.....	11500	10.50/20D	11.25/22	Wau 6RB	6-5x5¾	677	4.8	440	124-1800	7-3½x17⅜	..	BL 7341	4	Wis 1737 KW	2F	H	7.14-9.35	Wis F417KW	Ws4IA	654	1080	a	TD	Opt	9⅞x3x⅜	T
14	F.W.D.....H8	1½	2400	132	156	11200	4700	6.50/20D	7.50/20	Wau BK	6-3¾x4¼	282	5.4	185	84-3200	7-2⅝x10¼	Y	BL 224	4	Tim 63620	S	H	5.14-8.0	Wis F30B8	L4IHV	286	452	G	T4	67¾	7½x2¾x	C
15	.....H4	1½-2	3325	120	160	12800	5500	34x7S	9.00/20	Wis SU	4-4x5	251	4.5	160	50-2000	3-2 x8	Y	BL 60	4	Own H	BF	H	6.00-10.	Own H	OT4XM	252	252	G	2I	81	5 x2¼x	C
16	.....H6	2-2½	3560	133	160	14800	5800	9.00/20S	9.00/20	Wau MS	6-3¾x4⅜	315	4.5	200	72-2500	7-2⅝x12⅜	Y	BL 2252	5	Own H	BF	H	6.00-10.	Own H	OT4XM	220	252	G	T4	81½	7x3x	C
17	.....HH6	2½-3	4285	138	170	18700	6900	9.75/20S	9.75/20	Wau MK	6-4⅛x4¾	381	4.5	240	85-2500	7-2⅝x12⅜	Y	BL 3352	5	Own U	BF	H	5.17-14.9	Own U	L4IHV	504	792	G	T4	86⅝	7½x3	C
18	.....B3		4200	124	156	16700	6460	36x6S	40x8	Own A	4-4¾x5½	398	4.0	210	56-1350	3-2x12	Y	CO & DAF	3	Own B	SF	H	5.65-12.0	Own B	OT4XM	238	252	G	T4	93	5 x2½x	C
19	.....CU6	3½-4	5145	147	179	21300	8170	10.50/20S	11.25/20	Wau SRS	6-4½x5½	411	4.6	260	91-2300	7-3x13⅞	Y	Own U	5	Own U	BF	H	5.17-14.9	Own U	OT4XM	504	867	G	T4	92	7x3x	C
20	.....CU6A	3½-4	4845	147	179	21300	7970	10.50/20S	11.25/20	Wau SRS	6-4½x5½	411	4.6	260	91-2300	7-3x13⅞	Y	BL 5352	5	Own U	BF	H	5.17-14.7	Own U	OT4XM	504	867	G	T4	92	7x3x	C
21	.....SSU	4-5	5295	147	179	23600	8400	11.25/20S	11.25/20	Wau SRL	6-4⅜x5½	462	4.5	305	102-2400	7-3x13⅞	Y	Own U	5	Own U	BF	H	5.17-14.9	Own M	OT4XM	504	867	G	T4	92	7x3x	C
22	.....SSUA	4-5	4995	147	179	23300	8200	11.25/20S	11.25/20	Wau SRL	6-4⅜x5½	462	4.5	305	102-2400	7-3x13⅞	Y	BL 5352	5	Own M	BF	H	5.17-14.9	Own M	OT4XM	504	867	G	T4	92	7x3x	C
23	.....MJ5	5-6	6435	150	195	27700	10700	10.50/20D	12.00/20	Wau SRK	6-4⅜x5½	517	4.4	330	110-2300	7-3x13⅞	Y	BL 7341	4	Wis 1337	2F	H	4.55-7.35	Wis 1337	B4IMV	666	976	G	T4	113	8x3x	C
24	.....LBU	5-6	4800	171	Op	23600	8900	9.00/20D	11.25/20	Wau SRS	6-4½x5½	411	4.6	260	91-2300	7-3x13⅞	Y	BL 55	4	Own U	D	H	5.17-14.9	Own U	O4IM	720	867	G	4D	Opt	7x3x	C
25	.....MF6	5-6	5935	147	179	24300	9400	10.50/20D	11.25/20	Wau SRK	6-4⅜x5½	517	4.4	330	110-2300	7-3x13⅞	Y	Own U	5	Own M	BF	H	5.17-14.9	Own M	O4IB	504	867	G	T4	113	8x3x	C
26	.....M6	6-7½	7600	150	195	31000	11700	12.75/20S	13.50/20	Wau 125	6-4⅜x5½	462	5.2	324	125-2500	7-3x13⅞	Y	BL 7341	4	Wis 1337	2F	H	5.15-8.33	Wis 1337	B4IMV	666	976	G	T4	113	8x3x	C
27	.....MJ6	6-7	6750	150	195	29000	10900	10.50/20D	12.00/20	Wau 125	6-4⅜x5½	462	5.2	324	125-2500	7-3x13⅞	Y	BL 7341	4	Wis 1337	2F	H	4.55-7.35	Wis 1337	B4IMV	666	976	G	T4	113	8x3x	C
28	.....M7	7½-10	8575	150	195	37600	12400	40.00/10D	13.50/20	Wau RB	6-5x5¾	677	4.4	440	127-2000	4-3½x11⅜	Y	BL 7341	4	Wis 1737	2F	H	5.15-8.33	Wis 1737	B4IMV	666	976	G	T4	110½	10x3x	C
29	.....M10	10-11	9600	150	195	40000	13400	13.50/20S	13.50/20	Her HXE	6-5¾x6	935	4.5	610	198-2000	7-3½x17	Y	BL 7351	5	Wis 1910	2F	H	5.78-9.35	Wis 1910	Ws4IMV	639	976	G	T4	110½	10x3x	C
30	.....T26	6-7	2500	132	Op	26000	26000	9.00/20S	7.50/20	Wau BK	6-3¾x4¼	282	5.4	185	84-3200	7-2⅝x10¼	Y	BL 224	4	Tim 63620	S	H	5.14-8.00	Wis F30B8	L4IMV	286	452	G	T4	67¾	8⅞x2¾x	C
31	.....T60	20-25	6345	134	Op	60000	9900	9.75/20D	10.50/20	Wau 125	6-4⅜x5½	462	5.2	324	125-2500	7-3x13⅞	Y	Own U	5	Own M	BF	H	5.17-14.9	Own U	O4A	568	868	G	T4	80	7x3x	C
32	.....T72	25-30	7000	120	Op	72000	10500	9.75/20D	10.50/20	Wau 125	6-4⅜x5½	462	5.2	324	125-2500	7-3x13⅞	Y	BL 7341	4	Wis 1237	2F	H	4.55-7.35	Wis 1237	4A	610	868	G	T4	67¼	8x3x	C
33	Hug.....43-4	3½-4	6185	150	160	22000	9000	10.50/20S	10.50/20	Bud K428	6-4⅝x4¾	428	4.8	280	107-2600	7-3x11½	Y	Fu 5A530	5	Wis 72000L	2F	H	5.63*8.59	Wis F213H	L4IHV	532	868	a	TD	70¾	8x3x¼	T
34	.....87K4	4-5	6685	150	160	24000	9700	10.50/20S	10.50/20	Bud K428	6-4⅝x4¾	428	4.8	280	107-2600	7-3x11½	Y	Fu 5A530	5	Wis 1337BH	2F	H	5.63*8.59	Wis G313H	L4IHV	731	976	a	TD	70¾	7x3¾x	I
35	.....87Q4	5-7	8350	160	170	28000	10300	11.25/20S	11.25/20	Bud L525	6-4½x5½	525	4.8	340	111-2200	7-3x11½	Y	Fu 5A530	5	Wis 1737KW	2F	H	5.75*9.16	Wis F413W	W4IA	648	976	a	TD	86½	8x4x	I
♦36	.....(D) 100	25	14000	135	135	55000	21000	18.00/24D	18.00/24	Cat D13000	6-5¼x8	124	15.	772	125-850	7-3½x18	Y	Spl 7440	4	Tim 79740W	2F	T	**-10.0	Wis F419CW	4IA	648	976	a	TD	135	9x4	I
37	Indiana.....12X4	1½-2	2650	131	Op	10000	4650	6.50/20D	7.50/20	Her JXC	6-3¾x4¼	282	5.4	176	73-2800	7-2½x10	Y	BL 2341	4	Tim 53210	SF	H	5.14-5.66	Wis F30B	L4IHV	260	412	G	TD	46⅝	7 x2½x	T
38	.....14X4	2-2½	3950	140	Op	14000	5900	7.50/20D	8.25/20	Her JXC	6-3¾x4¼	282	5.4	176	73-2800	7-2½x10	Y	BL 2341	4	Tim 54413	SF	H	5.14-6.6	Wis F54H	L4IHV	260	528	G	TD	55⅝	7½x2¾x	T
39	.....16X4	2½-3	4850	156	Op	16000	7500	7.50/20D	8.25/20	Her WXC	6-4x4½	339	4.7	226	76-2400	7-2½x13¼	Y	BL 3341	4	Wis 5000L	SF	H	6.35-7.35	Wis F500	L4IHV	330	578	G	TD	72½	7½x3x	T
40	.....18X4	4½-5	5850	160	Op	21000	9000	9.00/20D	9.75/20	Her YXC	6-4⅜x4¾	428	4.5	283	94-2200	7-3x14	Y	BL 5341	4	Wis 72000L	2F	H	7.06-8.00	Wis F213	L4IHV	492	867	G	TD	72	8½x3x	T
41	.....18X4A	4½-5	5400	160	Op	21000	8700	9.00/20D	9.75/20	Her YXC	6-4⅜x4¾	428	4.5	283	94-2200	7-3x14	Y	BL 5341	4	Tim 58205H	SF	H	6.14-6.83	Wis F580H	L4IHV	345	785	G	TD	72	8x3x¼	T
42	.....20X4	5-6	7200	172	Op	24000	10600	9.75/20D	9.75/20	Her RXB	6-4½x5¼	501	4.5	330	106-2000	7-3x12½	Y	BL 5341	4	Wis 1337H	2F	H	7.52-8.59	Wis F311H	L4IHV	582	975	G	TD	84	8¼x3x⅜	T
43	.....22X4	5½-6½	10000	185	Op	31000	13000	1.50/20D	10.50/20	Her HXB	6-5x6	707	4.5	455	148-2000	7-3½x17	Y	BL 7341	4	Wis 417W	2F	H	7.14-9.15	Wis 1737W	Ws4IA	648	975	G	TD	84	10x3x	T
♦ 44	Mar.-Herr..B5-4x4	1½-3	1345	132	...	.....	4040	6.00/20D	32x6	Ford V8	8-3 x3¾	221	5.3	138	80-3800	3-2x5⅝	N	WG T9	4	Ford	SF	R	5.14-6.6	Own	41H	314	421	a	2/4I	58	7x2¾x	C
♦ 45	.....B6-4x4	1½-3	1395	157	...	.....	4154	6.00/20D	32x6	Ford V8	8-3 x3¾	221	5.3	138	80-3800	3-2x5⅝	N	WG T9	4	Ford	SF	R	5.14-6.6	Own	41H	314	421	a	2/4I	83½	7x2¾x	C
46	.....B10-4	2-2½	2490	143	Op	.....	4430	6.50/20D	7.50/20	Her JXB	6-3½x4¼	263	5.4	182	78-2800	7-2½x10	N	WG T9	4	Tim 53200	BF	H	5.14-6.6	TWH	41H	267	452	a	TX	60	7⅞x2½x	C
47	.....B20-4	2½-3	2820	143	Op	.....	4665	7.00/20D	7.50/20	Her JXC	6-3¾x4¼	282	5.3	196	84-2800	7-2½x10	N	Fu 5A29	5	Tim 53300	BF	H	5.66-6.6	TWH	41H	267	452	a	TX	60	7⅞x2½x	C
48	.....B30-4	3-3½	3250	143	Op	.....	5155	7.50/20D	8.25/20	Her JXD	6-4x4¼	320	5.3	224	95-2800	7-2½x10	N	Fu 5A29	5	Tim 54200	BF	H	5.8-6.8	TWH	41H	287	527	a	TX	60	7⅞x2½x	C
♦ 49	.....B40-4	3½-4	4550	158	Op	.....	7000	8.25/20D	9.00/20	Her WXC3	6-4¼x4½	383	5.0	260	106-2800	7-2⅝x13¼	Y	Fu 5A380	5	Tim 56200	BF	H	6.1 -1.0	TWH	41H	342	578	a	FD	72	9½x3x	C
♦ 50	.....B50-4	4-5	4875	158	Op	.....	7895	9.00/20D	9.75/20	Her WXC3	6-4¼x4½	383	5.0	260	106-2800	7-2⅝x13¼	Y	Fu 5A380	5	Tim 58200	BF	H	** 7.8	TWH	41H	384	785	a	FD	72	9½x3x	C
♦ 51	.....B60-4	5-6	6500	161	Op	.....	8785	9.00/20D	9.75/20	Her RXB	6-4½x5¼	501	4.5	330	110-2200	7-3x14	Y	Fu 5A530	5	Wis 72000	2F	H	** 7.27	Own-Wis	41H	461	785	a	FD	72	9½x3x¼	C
♦ 52	.....B70-4	6-7	8895	161	Op	.....	9880	9.75/20D	9.75/22	Her RXB	6-4½x5¼	501	4.5	330	110-2200	7-3x14	Y	Fu 5A530	5	Wis 1337	2F	H	7.52-1.0	Own-Wis	41A	738	975	a	FD	72	10 x3x	C
♦ 53	.....B80-4	7-9	9750	161	Op	.....	10420	10.50/20D	10.50/22	Her RXC	6-4⅝x5¾	529	4.9	350	114-2200	7-3x14	Y	Fu 5A530	5	Wis 1737	2F	H	8.05-1.0	Own-Wis	41A	738	975	a	FD	72	10 x3x	C
♦ 54	.....TH415-4	7-9	11875	198	Op	.....	12500	10.50/20D	10.50/22	Her HXB	6-5x6	707	4.5	455	148-2000	7-3½x17	Y	BL 7341	4	Wis 1737	2F	H	8.05-1.0	Own-Wis	41A	738	975	a	FD	102	8½x3x	P
♦ 55	.....TH420-4	8-10	12750	198	Op	.....	13750	10.50/20D	10.50/24	Her HXD	6-5½x6	855	4.5	555	180-2000	7-3½x17	Y	BL 7341	4	Wis 1910	2F	H	8.88-1.0	Own-Wis	41A	738	975	a	FD	102	10x3x	P
♦ 56	(D).... BD30-4	3-3½	4425	143	Op	.....	5615	7.50/20D	8.25/20	Her DJXB	6-3¼x4½	250	...	180	78-2600	7-3x13¼	Y	Fu 5A29	5	Tim 54200	BF	H	** 6.8	TWH	41H	281	527	a	TX	60	7⅞x2½x	C
♦ 57	(D).... BD70-4	6-7	11315	161	Op	.....	10775	9.75/20D	9.75/22	Her DRXB	6-4⅜x5¼	474	...	350	124-2200	7-3x13¼	Y	Fu 5A530	5	Wis 1337	2F	H	7.52-1.0	Own-Wis	41A	738	975	a	FD	72	10 x3x	C
♦ 58	(D).... BD80-4	7-9	12150	161	Op	.....	11315	10.50/20D	10.50/22	Her DRXB	6-4⅜x5¼	474	...	350	124-2200	7-3x13¼	Y	Fu 5A530	5	Wis 1737	2F	H	8.05-1.0	Own-Wis	41A	738	975	a	FD	72	10 x3x	C
♦ 59	(D).. THD415-4	7-9	14400	198	Op	.....	13300	10.50/20D	10.50/22	Her DHXB	6-5x6	707	...	530	176-1800	7-3½x17	Y	BL 7341	4	Wis 1737	2F	H	8.05-1.0	Own-Wis	41A	738	975	a	FD	102	8½x3x	P
♦ 60	(D).. THD420-4	8-10	15100	198	Op	.....	14500	10.50/20D	10.50/24	Her DHXB	6-5x6	707	...	530	176-1800	7-3½x17	Y	BL 7341	4	Wis 1910	2F	H	8.88-1.0	Own-Wis	41A	738	975	a	FD	102	10x3x	P
61	Oshkosh....WLD	3-3½	4885	146	201	18500	6900	9.75/20S	11.25/20	Her WXC3	6-4¼x4½	383	4.7	265	106-2800	7-2⅝x13¼	Y	Fu 5-A-380	5	Own WLD	2F	H	5.0-8.1	Own WLD	L4IH	592	975	G	TX	82	7x3x¼	
62	.....WLX	3-3½	4490	146	201	18300	6700	9.75/20S	11.25/20	Her WXC2	6-4⅝x4½	360	4.7	245	106-2800	7-2⅝x13¼	Y	Fu 5-A-380	5	Own WLX	2F	H	5.0-8.1	Own WLX	L4IH	592	975	G	TX	82	7x3x¼	T
63	.....JCB	2	2885	153	181	11000	5420	7.00/20D	9.00/20S	Her JXC	6-3¾x4¼	282	5.3	176	73-2800	7-2½x10	N	Fu 5B29	10	Own JCB	F	H	5.1-6.6	Own JCB	L4IH	280	450	a	TX	71	6x3½x¼	C
64	.....JD	3	3490	153	181	13800	5610	7.50/20D	9.00/20S	Her JXD	6-4x4¼	320	5.3	204	84-2800	7-2½x10	N	Fu 5B29X	10	Own JD	F	H	5.8-6.8	Own JD	L4IH	335	578	a	TX	71	6x3½x¼	C
65	.....FC-35	5-6	6485	146	165	25000	9500	11.25/20S	11.25/20	Her RXBO	6-4½x5¼	500	5.4	360	121-2200	7-3x12½	Y	Fu 5A530X	5	Own FC35	2F	H	5.2-7.6	Own FC35	L4IH	650	975	G	TX	82	7x3x½	
66	.....FB-35	6-7	6850	146	165	28000	10300	10.50/20D	11.25/20	Her RXCO	6-4⅝x5¼	529	5.4	380	128-2200	7-3x12½	Y	Fu 5A530X	10	Own FB35	2F	H	5.2-7.6	Own FB35	L4IH	650	975	G	TX	82	8x3x½	
67	.....B3S	3½-4	4960	146	165	21500	8250	10.50/20S	11.25/20	Her WXC3	6-4¼x4½	383	4.7	265	106-2800	7-2⅝x13¼	Y	Fu 5-A-380	5	Own B3S	SF	H	5.5-7.8	Own B3S	L4IH	516	867	G	TX	82	7x3x½	TL
68	.....B3D	3½x4	5490	146	165	21800	8500	10.50/20S	11.25/20	Her WXC3	6-4¼x4½	383	4.7	265	106-2800	7-2⅝x13¼	Y	Fu 5-A-380	5	Own B3D	2F	H	5.0-8.4	Own B3D	L4IH	650	975	G	TX	82	7x3x½	TL
69	.....C3S	4-5	5460	146	165	23000	8700	11.25/20S	11.25/20	Her YXC2	6-4½x4¾	453	4.4	297	99-2200	7-3x15	Y	Fu 5-A-530	5	Own C3S	SF	H	5.5-7.8	Own C3S	L4IH	516	867	G	TX	82	7x3x½	TL
70	.....C3D	4-5	5945	146	165	23000	8900	11.25/20S	11.25/20	Her YXC2	6-4½x4¾	453	4.4	297	99-2200	7-3x15	Y	Fu 5-A-530	5	Own C3D	2F	H	5.0-8.4	Own C3D	L4IH	650	975	G	TX	82	7x3x½	TL
71	.....R3S	5	5980	146	165	23000	8800	11.25/20S	11.25/20	Her RXB	6-4½x5¼	500	4.9	330	106-2000	7-3x12½	Y	Fu 5-A-530	5	Own R3S	SF	H	5.5-7.8	Own R3S	L4IH	516	867	G	TX	82	7x3x½	TL
72	.....FD	6-7½	7350	146	165	30000	11500	10.50/20D	12.00/20	Her RXCO	6-4⅝x5¼	529	5.4	355	128-2200	7-3x12½	Y	Fu 5-A-530	5	Own FD	2F	H	6.3-9.1	Own FD	L4IH	650	975	G	TX	82	8x3x½	TL
73	.....BG3	7½-10	8900	168	178	37000	13200	10.50/24D	13.50/20	Her HXB	6-5x6	707	4.5	455	148-2000	7-3½x17	Y	BL 7341	4	Own BG3	2F	H	6.3-9.1	Own BG3	B4IMV	666	975	G	TX	85	10x3¼x½	
74	.....GD	10	10200	168	178	38000	14200	13.50/20S	13.50/20	Her HXE	6-5¾x6	935	4.5	610	198-2000	7-3½x17	Y	BL 7341	4	Own GD	2F	H	7.16-10.0	Own GD	B4IMV	666	975	G	TX	85	10x3¼x½	L
75	Walter.....FND	2½-3½	4600	126	150	16000	7000	9.75/20S	10.50/20S	Own 6MK	6-4½x4¾	381	6.5	240	85-2500	7-2⅝x12½	Y	Own FN	5	Own FN	2D	H	6.1-8.1	Own FN	O4FXM	440	560	G	TX	84	7x2¾x¼	T
76	.....FQS	3-5	5000	138	150	20000	8000	9.00/20D	9.75/20	Own 6-110	6-4x4¾	358	5.2	250	110-2800	7-2⅞x12½	Y	Own FQ	5	Own FQ	2D	H	6.1-8.1	Own FQ	O4FIM	336	500	G	TX	84	9x2½x¼	D
77	.....FJS	4-6	6000	138	150	23000	9000	9.75/20D	10.50/2	Own 6-125	6-4⅜x5½	462	5.2	325	125-2500	7-3x13⅞	Y	Own FM	5	Own FJ	2D	H	6.1-8.1	Own FJ	O4FIM	336	500	G	TX	84	9x2½x¼	
78	.....FMD	4-5	5500	126	150	20000	8000	9.00/20D	9.75/20	Own 6SRL	6-4⅜x5½	462	5	320	110-2500	7-2⅞x12½	Y	Own FM	5	Own FM	2D	H	6.1-8.1	Own FM	O4FXM	440	560	G	TX	84	12x3½x¼	TL
79	.....FJMT	5	6000	114	...	24000	9000	9.75/20D	10.50/20	Own 6-125	6-4⅜x5½	462	5.2	325	125-2500	7-3x13⅞	Y	Own FJM	5	Own FJM	2D	H	6.1-8.1	Own FJ	O4FXM	730	1060	G	TX	72	12x3½x¼	TL
80	.....FKMD	5	6000	126	150	23000	9000	9.75/20D	10.50/20	Own 6SRK	6-4⅝x5½	517	5	345	120-2500	7-3x13⅞	Y	Own FM	5	Own FJM	2D	H	6.1-8.1	Own FJ	O4FXM	440	560	G	TX	84	12x3½x¼	TL
81	.....FCKD	5-6	6600	126	138	25000	10000	9.75/24D	10.50/24	Own 6SRK	6-4⅝x5½	517	5	345	120-2500	7-3x13⅞	Y	Own FC	5	Own FB	2D	H	7.1-10.1	Own FB	O4FXM	550	630	D	TX	84	13x3¾x¼	B
82	.....FCS	5-7	7400	138	162	27000	11000	9.75/24D	10.50/24	Own 6SRK	6-4⅝x5½	517	5	345	120-2500	7-3x13⅞	Y	Own FC	5	Own FB	2D	H	7.1-10.1	Own FB	O4FXM	550	630	D	TX	96	14x3¾x¼	B
83	.....FBS	5-8	8000	138	162	30000	11000	10.50/24D	11.25/24	Own 6RB	6-5x5¾	677	5	460	150-2200	5-3½x10⅝	Y	Own FB	5	Own FB	2D	H	7.1-10.1	Own FB	O4FXM	550	630	D	TX	96	14x3¾x¼	B
84	.....FBSR	7-10	8600	138	162	35000	12000	11.25/24D	12.00/24	Own 6RB	6-5x5¾	677	5	460	150-2200	5-3½x10⅝	Y	Own FB	5	Own FBR	2D	H	7.1-10.1	Own FB	O4FXM	800

Six-Wheelers
Wheels Driven

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Line Number	MAKE AND MODEL	GENERAL (See Keynote) Tonnage Rating	Chassis Price	Standard Wheelbase	Max. W. B. Furnished	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	Maximum Tire Size Furnished	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION Make and Model	Forward Spd's	REAR AXLE Make and Model	Gear and Type	Drive & Torque	Gear Ratio Range in High	FRONT AXLE Make and Model	BRAKES SERVICE Make Location Type Operat'n	Lining Area	Drum Area	Drum Material	Hand Location Type	C-A Dimension (Std. W. B.)	FRAME Side Rail Dimensions	Type
1	LeMoon...700	4R 5–6	4475	187	199	.....	8500	8.25/20D	8.25/20	Wau 6SRL	6–4¼x5½	462	4.5	300	98–2000	7–3x13¾	Y	BL 5351	Tl 63703-97H	WF	R 6.4-7.4	Tim 35000H	L4IHV	525	.....	c	CD	108	9x4½	B
2	800	4R 6–7	5100	187	199	.....	9720	9.00/20D	9.75/20	Wau 6SRL	6–4¼x5½	462	4.5	300	98–2000	7–3x13¾	Y	BL 5351	Tl 65703-97H	WF	H 6.75-7.4	Tim 35000H	L4IHV	633	.....	c	CD	108	9x4½	B
3	900	4R 7–8	6775	191	203	.....	12000	9.75/20D	40x8	Wau 6SRL	6–4¼x5½	462	4.5	300	98–2000	7–3x13¾	Y	BL 5351	TimSW310W	WF	H 7.25-9.25	Tim 35000W	W41A	966	.....	c	CD	108	9x4½	B
4	1000	4R 8–10	7950	196	208	.....	12600	9.75/20D	40x8	Wau 6AB	6–4¼x5½	462	5.1	324	125–2600	7–3x13¾	Y	BL 5351	TimSW310W	WF	H 7.25-9.25	Tim 26050W	W41A	966	.....	c	CD	108	9x4½	B
5	1200	4R 10–12	8500	196	208	.....	14000	9.75/20D	40x8	Wau 6RB	6–5x5¾	677	4.6	460	127–2000	4–3½x11¾	Y	BL 7351	TimSW410W	WF	H 7.6-9.5	Tim 26050W	W41A	966	.....	c	CD	108	9x4½	B
6	(1)...1200D	4R 10–12	9750	196	208	.....	14000	9.75/20D	40x8	Cum.Die.H6	6–4⅞x6	672	17.1	420	125–1800	7–3¾x16½	Y	BL 7351	TimSW410W	WF	H 7.6-9.5	Tim 26050W	W61A	966	.....	c	CD	108	9x4½	B
7	Mack....BX	2C 8–15	7500	196	221	.....	13050	8.25/22D	9.00/24	Own CF	6–4¼x5½	468	5.2	310	118–2400	7–3x12¼	Y	Own BX	5	Own BX	A 6.54–8.92	Own BX	O61A	974	1518	a	FX	125	9½x3¾	T
8	BX	4R 8–15	7950	194	219	.....	14050	8.25/22D	9.75/24	Own CF	6–4¼x5½	468	5.2	310	118–2400	7–3x12¼	Y	Own BX	5	Own BX6	2F	A 6.54–10.0	Own BX	O61A	974	1518	a	FX	125	9½x3¾	T
9	(e.b.a.) CJ	2C 8–15	7650	149	188	.....	13100	8.25/22D	9.00/24	Own CF	6–4¼x5½	468	5.2	310	118–2400	7–3x12¼	Y	Own BX	4	Own BX	2F	A 6.54–8.92	Own CJ	O61A	974	1518	a	FX	123	9½x3¾	T
10	(e.b.a.) CJ	4R 8–15	8100	147	186	.....	13950	8.25/22D	9.75/24	Own BQ	6–4¼x5½	465	5.2	310	118–2400	7–3x12¼	Y	Own AK	4	Own BX6	2F	A 6.54–10.0	Own CJ	O61A	974	1518	a	FX	123	9½x3¾	T
11	BQ	2C 8–15	8850	199	235	.....	15150	9.75/22D	9.75/24	Own BQ	6–4¼x5½	611	4.8	390	125–2200	4–3½x10½	Y	Own AK	4	Own BK6	2F	A 7.43–10.0	Own BQ	O61A	1065	1626	a	FX	123	10½x3¾	T
12	BQ	4R 8–15	9350	197	233	.....	16000	9.75/22D	10.50/24	Own BQ	6–4¼x5½	611	4.8	390	125–2200	4–3½x10½	Y	Own AK	4	Own AK	2F	A 7.43–10.0	Own BQ	O61A	1065	1626	a	FX	106	10½x3¾	T
13	AK	2C 8–15	8350	191	231	.....	15900	9.75/22D	10.50/24	Own BQ	6–4¼x5½	611	4.8	390	125–2200	4–3½x10½	Y	Own AK	4	Own AK	2F	A 6.52–10.7	Own AK	O61A	1065	1626	a	FX	106	8¼x3¾	T
14	AK	4C 8–15	9350	191	231	.....	16900	9.75/22D	10.50/24	Own BQ	6–4¼x5½	611	4.8	390	125–2200	4–3½x10½	Y	Own AK	4	Own AK6	2F	A 6.52–10.7	Own AK	O61A	1065	1626	a	FX	106	8¼x3¾	T
15	AC	4R 8–15	8500	191	231	.....	15900	9.75/22D	10.50/24	Own BQ	6–4¼x5½	611	4.8	390	125–2200	4–3½x10½	Y	Own AC	4	Own AC6	CD	R 8.02–10.7	Own AK	O61A	1065	1626	a	T	108	8¼x3¾	T
16	AP	4R 8–15	10500	191	231	.....	16200	40x8D	10.50/24	Own AP	6–5x6	707	4.8	427	138–1900	4–3½x10½	Y	Own AC	4	Own AC	CD	R 8.02–10.7	Own AK	O61A	1065	1626	a	T	108	8¼x3¾	T
17	.....AP	4R 9–15	11000	191	231	.....	17400	9.75/22D	10.50/24	Own AP	6–5x6	707	4.8	427	138–1900	4–3½x10½	Y	Own AK	4	Own AK6	2F	R 6.52–10.3	Own AK	O61A	1065	1626	a	FX	106	8¼x3¾	T
18	Mar.-Herr. B5-6x6	3–6	2425	154	.....	.....	5821	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	5.3	138	80–3800	3–2x5⅝	N	WG T9	4	Tim	SF	R ** 6.6	Own	61H	496	629	a	2/61	80½	7½x2¾x½	TL
19	B6-6x6	3–6	2475	179	.....	.....	5925	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	5.3	138	80–3800	3–2x5⅝	N	WG T9	4	Tim	SF	R ** 6.6	Own	61H	496	629	a	2/61	105½	7½x2¾x½	TL
20	B5-6X4	3–6	1945	154	.....	.....	5466	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	5.3	138	80–3800	3–2x5⅝	N	WG T9	4	Tim	SF	R ** 6.6	Own	61H	496	629	a	2/61	80½	7½x2¾x½	TL
21	B6-6X4	3–6	1995	179	.....	.....	5570	6.00/20D	32x6	Ford V8	8–3⅛x3¾	221	5.3	138	80–3800	3–2x5⅝	N	WG T9	4	Tim	SF	R ** 6.6	Own	61H	496	629	a	2/61	105½	7½x2¾x½	TL
22	.....B40-6	7–9	6350	138	Op	.....	8690	8.25/22	9.00/22	Her WXC3	6–4¼x4½	383	5.0	260	106–2800	7–2⅝x13¾	Y	Fu 5A380	5	Tim SD151	2F	R ** 9.33	Own-Wis	61H	559	930	a	FD	72	9½x3¾	C
23	.....B70-6	10–12	10420	173	Op	.....	11415	9.00/20D	9.00/22	Her RXB	6–4¼x5½	501	4.5	330	110–2200	7–3x14	Y	Fu 5A380	5	Tim SD251	2F	R 7.83–11.0	Own-Wis	61A	1070	1443	a	FD	72	10½x3¾	C
24	.....B80-6	12–14	11900	173	Op	.....	13690	9.75/22D	9.75/22	Her RXC	6–5⅛x5¾	707	4.8	456	144–2000	7–3x14	Y	Fu 5A530	5	Tim SD353	2F	R ** 9.11	Own-Wis	61A	1114	1515	a	FD	84	10½x3¾	C
25	.....T415-6	14–17	16000	192	Op	.....	16690	10.50/20D	10.50/24	Her HXC	6–5⅛x6	855	4.5	555	180–2000	7–3½x17	Y	BL 7341	4	Tim SD453	2F	R ** 9.11	Own-Wis	61A	1114	1515	a	FD	102	10½x3¾	C
26	(D).....BD70-6	10–12	12850	173	Op	.....	12340	9.00/20D	9.75/22	Her DRXB	6–4¼x5½	474	...	350	124–2200	7–3x14	Y	Fu 5A530	5	Tim SD251	2F	R 7.83–11.0	Own-Wis	61A	1070	1443	a	FD	84	10½x3¾	C
27	(D).....BD80-6	12–14	14350	173	Op	.....	14615	9.75/20D	9.75/22	Her DRXB	6–4¼x5½	474	...	350	124–2200	7–3x14	Y	Fu 5A530	5	Tim SD353	2F	R 8.14–11.0	Own-Wis	61A	1114	1515	a	FD	84	10½x3¾	C
28	(D)...THD415-6	14–17	16650	192	Op	.....	17475	9.75/20D	9.75/22	Her DHXB	6–5x6	707	...	530	176–1800	7–3½x17	Y	BL 7341	4	Tim SD353	2F	R ** 9.11	Own-Wis	61A	1114	1515	a	FD	96	8¼x3¾	P
29	(D)...THD420-6	17–20	18400	198	Op	.....	19050	10.50/20D	10.50/24	Her DHXB	6–5x6	707	...	530	176–1800	7–3½x17	Y	BL 7341	4	Tim SD453	2F	R ** 9.11	Own-Wis	61A	1114	1515	a	FD	102	10x3¾	P
30	Ster. (b.c.)FBT130	7–8	4105	162	193	26000	7325	8.25/20D	8.25/20	Wau 6BK	6–3¾x4¾	282	5.4	185	84–3200	7–2⅝x10½	N	Own UC17	5	Own	SF	R 5.72–7.4	Tim 33000N	L4rTHV	400	944	a	TX	81	10x3¼x¼	L
31	.....(b.f.)FBT152	8–10	4880	177	207	32000	9475	9.00/20D	9.75/20	Wau 6-110	6–4x4¾	358	5.1	254	110–2800	7–2⅝x12½	Y	OwnUC11	5	Own	SF	R 5.72–7.8	Tim35000N	L4rTHV	454	1024	a	TX	91	10x3¼x¼	L
32	(b) FDT180	2C 10–10½	7535	181	211	36000	11485	9.75/20D	10.50/24	Wau 6SRL	6–4¼x5½	462	4.5	300	102–2400	7–3x13⅜	Y	Own UC2	4	Own	2F	R 6.85–9.4	Tim 26450N	O4r1A	792	1220	a	TX	93	12x3¼x¼	L
33	(b) FDT200	2C 12–12½	7920	181	211	40000	11985	9.75/20D	10.50/24	Wau 6-125	6–4¼x5½	462	5.0	324	125–2400	7–3x13⅜	Y	Own UC2	4	Own	2F	R 6.86–9.2	Tim 26450N	O4r1A	792	1300	a	TX	93	12x3¼x¼	L
34	(b) FCT180	2C 10–10½	7475	181	211	36000	11485	9.75/20D	10.50/24	Wau 6SRL	6–4¼x5½	462	4.5	300	102–2400	7–3x13⅜	Y	Own UC2	4	Own	CD	R 8.3–10.8	Tim 26450N	O4r1A	152	1488	s	TX	93	12x3¼x¼	L
35	(b) FCT200	2C 12–12½	7645	181	211	40000	11985	9.75/20D	10.50/24	Wau 6-125	6–4¼x5½	462	5.0	324	125–2400	7–3x13⅜	Y	Own UC2	4	Own	CD	R 8.3–10.8	Tim 26450N	O4r1A	152	1488	s	JX	93	12x3¼x¼	L
36	(b) HC8210	4R 12–18	10545	185	201	55000	14685	40x8D	10.50/24	Wau 6RB	6–5x5¾	677	4.7	440	125–2000	4–3½x11⅜	Y	Own UC9	4	Own	CD	R 10.0–11.7	Tim 27452N	W64f1A	792	1464	s	FX	95	9¼x3¾x3½	L
37	Ster. (b.c.)FBT130	7–8	4105	162	193	26000	7325	8.25/20D	8.25/20	Wau 6BK	6–3¾x4¾	282	5.4	185	84–3200	7–2⅝x10½	N	Own UC17	5	Own	SF	R 5.72–7.4	Tim 33000N	L4rTHV	400	944	a	TX	81	10x3¼x¼	L
38	Ward (D)440TC	2R 15	11000	240	246	44000	14000	9.75/22D	10.50/20	Cu. Die. HA	6–4¾x6	672	D 9.0	420	125–1800	7–3¼x16½	Y	BL 7351	5	Tim SDT420w	WF	R 5.64–10.2	Tim27452TW	W361A	1012	1514	a	TD	148¼	14x3¼x¼	T
39	LaFr.440TR	2R 15	9350	240	246	44000	13700	9.75/22D	9.00/20	Wau RB	6–5x5¾	677	5.5	465	145–2000	4–3¾x11½	Y	BL 7351	5	Tim SDT420w	WF	R 5.0–9.25	Tim27452TW	W361A	1012	1514	a	TD	115¼	14x3¼x¼	T
40	340	2R 7½	4490	204	230	28000	9200	8.25/20D	10.50/20	Wau MK	6–4¼x4¾	381	4.6	242	85–2500	7–2¾x12½	Y	BL 5351	5	Tim SBT251H	SF	T 5.4–9.25	Tim 35000H	L6IHV	651	1088	a	TD	148¼	12x3¼x¼	T
41	.....400T5	2R 12	7100	203	241	40000	13000	9.75/20D	10.50/20	Wau 6-125	6–4¾x5½	462	4.6	324	125–2600	7–3x13⅜	Y	BL 5351	5	Tim SWT320w	WF	R 5.64–10.2	Tim26450TW	W361A	902	1514	a	TD	116¼	14x3¼x¼	T
42	Wht 630SW 320	W4R 9–11	(6a)	193	205	.....	10000	9.00/20D	9.75/20	Own 7A	6–4⅜x5¼	434	4.9	285	107–2400	7–2¾x13⅛	Y	Own 4B	5	TimSW320W	WF	R 6.00–9.25	Own 6D	W361A	795	1192	a	CI	109¼	8¼x3⅛x¼	C
43	.643SW420	4R 12–14	(6a)	198	215	.....	14400	40x8D	9.75/24	Own 5A	6–4⅜x5¾	580	4.6	385	130–2300	7–3x15⅛	Y	Own 10B	4	TimSW420W	WF	R 6.80–10.2	Own 12D	W361A	833	1286	a	CI	109¼	8¼x3⅛x¼	C
44	**Electrics**																													
45	Brockway....50-E	1–1½	1380	91	Op	.....	2450	32x6S	32x6	GE Elec										Tim 53200H	SF	H	Tim 30000H	L4IH	248	380	a	CD	.....	5x6	CD
46	.....50-E	1	1500	91	112	.....	2850	30x5S	32x6	GE Elec										Tim 53200H	SF	H	Tim 30000H	L4IH	248	380	a	CD	.....	5x6	CD
47	.....125-E	2–3	2400	136	Op	.....	4800	32x6D	9.00/20	GE Elec										Tim 54300H	SF	H	Tim 31000H	L4IH	365	578	a	CD	100½	7½x2¾x¼	C
48	.....140-E	3–4	3200	146	Op	.....	5500	9.20/20D	9.75/20	West Elec										Wis 5000L	2F	H	Shu 15685B1	L4IH	365	578	a	CD	112½	7½x3¾x¼	C
49	.....170-E	5–6	3650	148	Op	.....	6700	9.75/20D	10.50/20	West Elec										Wis 72000L	2F	H	Shu 15685B1	L4IH	407	663	a	CD	112½	8x3¾x¼	C
50	.....195-E	6–7	4200	160	Op	.....	8040	9.75/20D	10.50/20	West Elec										Wis 1337BH	2F	H	Shu 15685B1	L4IH	500	772	a	CD	124½	8¼x3¾x⅝	C
50	Walker....400-1A	1–1½	1380	95	Op	.....	2350	32x6S	.....	Own Elec.										Own	F	H	Cla	B4IM	214	308	a	41	36	4x2x¼	CD
51	405	1	1450	116	Op	.....	2800	32x6S	.....	Own Elec.										Own	F	H	Cla	B4IM	214	308	a	41	75	4x2x¼	CD
52	.....405-1A	1 1½–2	1525	116	Op	.....	2600	32x6S	.....	Own Elec.										Own	F	H	Cla	B4IM	214	308	a	41	67	4x2x¼	CD
53	420	2 2½	1800	116	Op	.....	3600	32x6D	.....	Own Elec.										Own	F	H	Cla	B4IM	242	344	a	41	74	5x2x¼	CD
54	420	2½	2400	126	Op	.....	4700	32x6D	.....	Own Elec.										Own	F	H	Tim	B4IM	396	571	a	41	90	5x2x¼	P
55	440	3	3400	145	Op	.....	6300	38x8D	.....	Own Elec.										Own	2F	H	Tim	B4IM	396	571	a	41	90	5x2x¼	P
56	450	5–6	3650	160	Op	.....	7000	38x9D	.....	Own Elec.										Own	2F	H	Tim	B4IM	470	678	a	41	109	6x3¼x¼	P
57	480	6–7	5650	162	162	.....	7600	10.50/20D	.....	Own Elec.										Own	2F	H	Tim	B4IM	520	748	a	41	136	7x3¾x¼	P

† Denotes New Models or Change in Specifications.

There's money in selling SAFETY!

PINES

presents two outstanding safety devices

S·O·S *prevents this!*

PINES S. O. S. (Safety Overturn Switch) prevents fires by automatically breaking the ignition circuit when a vehicle overturns. No fleet operator can afford to overlook this simple, positive protection. S. O. S. is low in price and more than pays for itself by reducing premiums on cargo fire insurance. Approved by Underwriters Laboratories and most cargo insurance companies offer allowances for the use of this switch.

Pines S. O. S. Switch protects vehicle, cargo and lives. It is ruggedly built, foolproof, tamperproof, fully automatic. Easy to install and requires no servicing or adjustment. Guaranteed against defects in material or workmanship.

The PINES S-O-S is a small compact unit of molded plastic which contains two mercury tubes which automatically break ignition circuits when motor vehicles overturn.

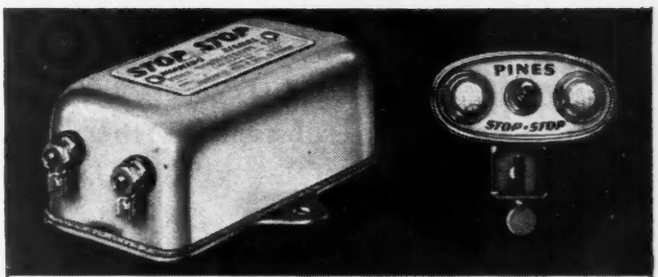
Pines STOP-STOP *flashes its warning*

This warning signal *alternately* flashes the two stop lights when the brakes are applied. New principle of positive operation on a definite timed frequency. Effective whether the vehicle is parked or in motion. The "wig-wag" effect instantly arrests the attention of following cars.

Tel-Tail-Lite dash control flashes in unison with the stop lights. Permits manual control for continuous operation when parked. The Pines Stop-Stop is tamperproof and reliable; actually reduces current consumption. Inexpensive, easy to install; *use present stop lights* — nothing else to buy. Maximum discounts apply.

Phone your distributor, or write us for discounts and full details.

PINES WINTERFRONT COMPANY



PINES WINTERFRONT COMPANY
1119 N. Cicero Ave., Chicago, Ill.

Please send discount sheet and information about Pines S. O. S. Switch and Pines Stop-Stop.

Name.....

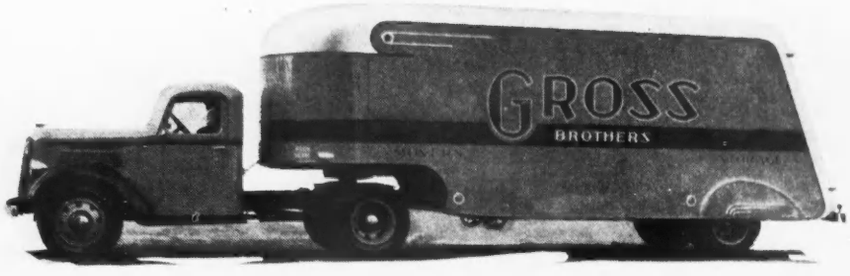
Address.....

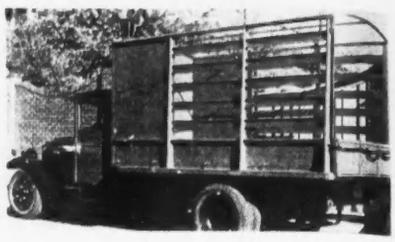
City..... *State*.....

Vocational Bodies

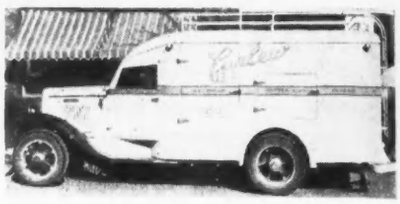
(CONTINUED FROM PAGE 29)

Haskelite's Plymetl was used in the sides of this streamlined trailer built by H. Barkow, Milwaukee. Its use eliminated 500 lb. in the weight of the body. Inside is lined with three-ply veneer and there is room in the nose for tools, etc. Tailgate is built inside of the rear doors. Front dome, side-rails, and rear rounded corners are all bumped metal and welded into one unit.

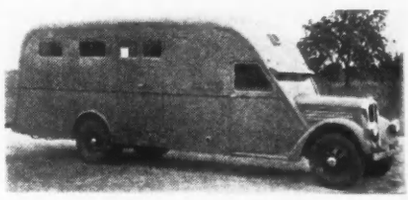




This is an ATECO (Auto Truck Equipment) steel express body 12 ft. long, 6 ft. wide and 68 in. high at sides. Steel compartment at the rear under the floor contains tarpaulin. Tarpaulin support overhead is removable for high loading. All slates, uprights, etc., are pressed steel. Tailgate is heavy wood.



Brown Metal Works built this refrigerated body using Dry-Zero insulation so that Curlew Creamery could truck dairy products safely from Spokane to Coulee Dam. Body has 5 in. of Dry-Zero in the roof and 4 in. in walls and floor. Dry Ice is used for refrigeration. Body is of aluminum alloy and weighs only 1150 lb. Chassis is IHC.



Proctor-Keefe built this de luxe horse van body Model G-677 and mounted it on a GMT Model T-46 of 215-in. wheelbase. Body is 24 ft. long, and has provisions for six horses. It is of hardwood construction with Auto Body steel panels and French type roof. Sleeping compartment is in rear of driver's seat.

Weldmech Steel Products designed and built this streamline bottlers' truck body with enclosed waterproof compartment just behind the cab and a sign carrier in the rear. Body and truck will easily handle six dozen cases.

(TURN TO PAGE 73, PLEASE)

"STURACO" EXTREME PRESSURE ("E.P.") GEAR AND CHASSIS LUBRICANTS

The Use of "STURACO" is Steadily Increasing

IN THE FACE OF INTENSE COMPETITION AND ALL KINDS OF "INSPIRED" PROPAGANDA

BECAUSE Testimony of leading transportation engineers who have actually used "STURACO" over a period of four years substantiates the unquestionable merit of the "STURACO" development.

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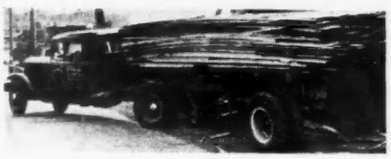
BRANCHES IN PRINCIPAL CITIES

Vocational Bodies

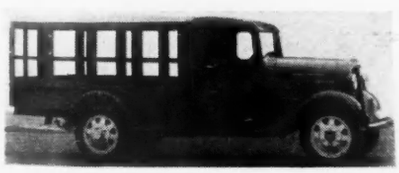
(CONTINUED FROM PAGE 70)

Transportation Engineers provided the maximum in cubic feet of loading space with this Dearborn cab-over-engine conversion using a Ford chassis. A 36-in. Olsen frame extension was used, permitting a 22-ft. body, plus loading space over the cab. Operator is Manion Steel Barrel Co.

Grico six-wheel unit has converted this Federal Model 28 into a heavy-duty baby. It is equipped with a 14-cu. yd., Heil-built body constructed of copper molybdenum steel, and Heil telescopic hoist. The body has a double-acting tail-gate with a 2-ft. square hinged door in the gate and a floor chute on each side at the rear. Operator is Virginia Coal of Chicago.



Fruehauf trailer lumbers to the rescue with a load of lumber that's no small haul. We don't know how many board feet are in this load but this "semi" won't fail getting there not even by a foot. Note the hand crank and gears on the side for rolling lumber off and on.



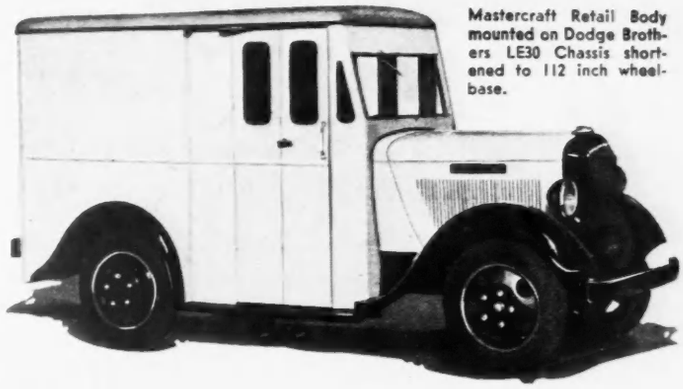
Rex-Watson, Canastota, N. Y., designed and built this Model ED-745 display express body so that an operator can make no secret of what he carries. Inside dimensions are: 114 in. long, 46 in. wide and 56 in. high. Chassis is GMT.

(TURN TO PAGE 76, PLEASE)

General Motor's Model G-703 de luxe open rack or stake body on a GMT Model T-46. Wheelbase is 178 in. Outside body length is 14 ft. 7 in., width is 92 in. and height is 40 in. It is of hardwood construction with metal-covered panel section.

MASTERCRAFT
TRUCK BODY

Mastercraft Retail Body mounted on Dodge Brothers LE30 Chassis shortened to 112 inch wheelbase.



Another SPECIALLY STYLED Mastercraft

Retail Truck Body for Baked Goods, Milk, and House-to-House Delivery

Again Luce makes an important contribution to the safe and economical delivery of food products. Important because, as in other Mastercraft Truck Body designing, this Retail Delivery requires no chassis altering except in factory length, and all details are arranged for multiple reproduction at practically standard price.

A recital of material and operating features includes the best the industry affords. Jack-knife doors open on either side, giving one-step access to driver's seat. Rear doors open to width of two milk cases (32 in.) and fold back well inside of body lines. All hardware and material of best quality throughout, making a long lasting job, with every feature of convenience, safety and economy.

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NEW STEWARTS Slice DELIVERY OVERHEAD

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Compare Stewarts with any low cost truck on the market for ease of handling . . . flexibility of performance . . . ruggedness of construction and quality. You can then understand Stewart dependability and low repair expense.

Get full information on the Stewart model and capacity best suited to your requirements —There is a Stewart for any hauling requirement—capacities ranging from ½ ton to 10 tons. Catalog on request.

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BUFFALO, N. Y.

Buddy Stewart

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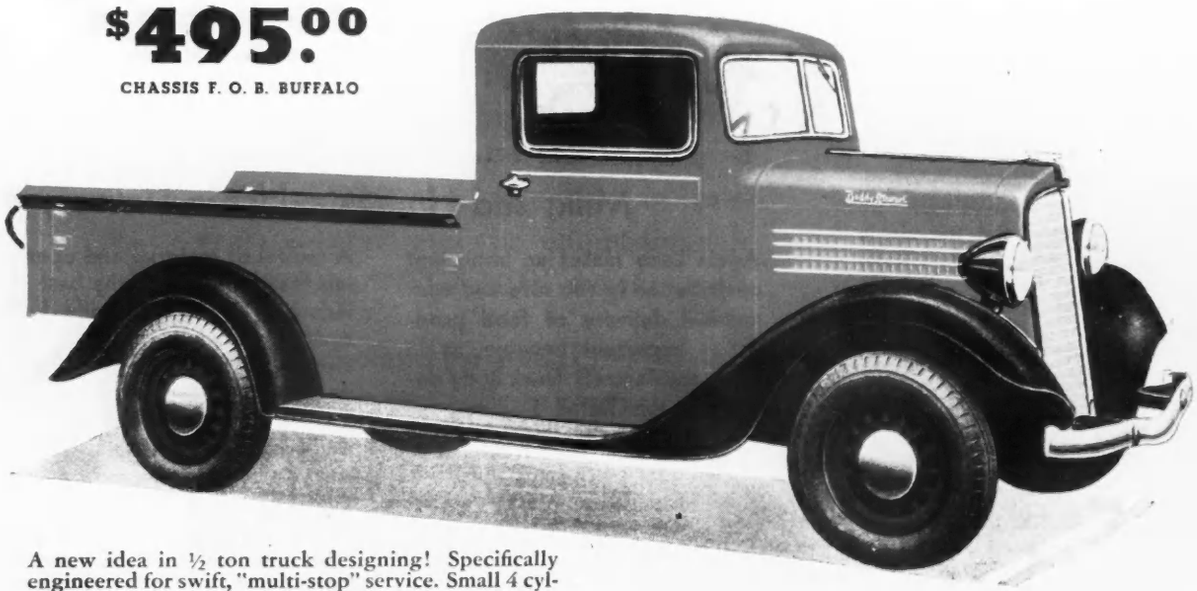
CHASSIS F. O. B. BUFFALO



A new idea in ½ ton truck designing! Specifically engineered for swift, "multi-stop" service. Small 4 cylinder engine, extra large hydraulic brakes and clutch, synchro-mesh transmission, full floating truck axle.

STEWART TRUCKS HAVE WON

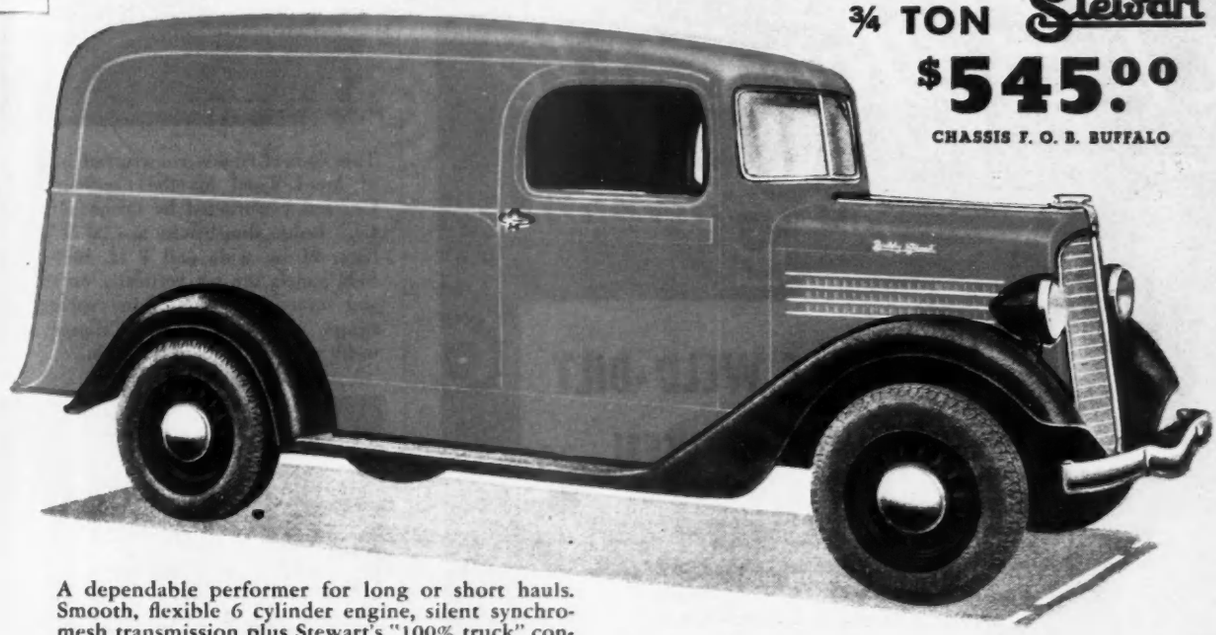
✓ LOWER *Initial Cost*

✓ LOWER *Operating Cost*

¾ TON **Stewart**

$545.00

CHASSIS F. O. B. BUFFALO



A dependable performer for long or short hauls. Smooth, flexible 6 cylinder engine, silent synchro-mesh transmission plus Stewart's "100% truck" construction throughout. A real investment in economy.

NEW 1½ TON **Stewart**

$595.00

CHASSIS F. O. B. BUFFALO

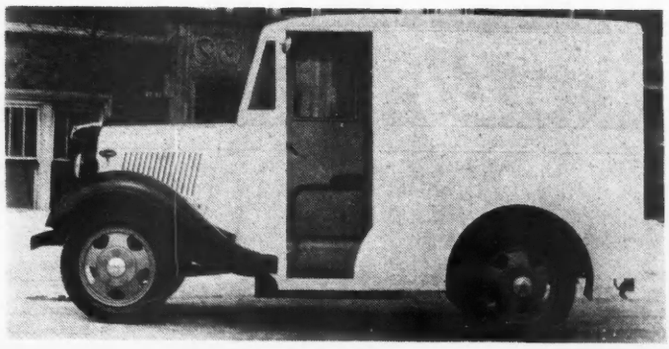
Here's heavy truck dependability with attractively low initial cost. Powerful 6 cylinder engine, rugged clutch, four speed transmission, full floating rear axle, 4 wheel hydraulic brakes, plus many other improved features.

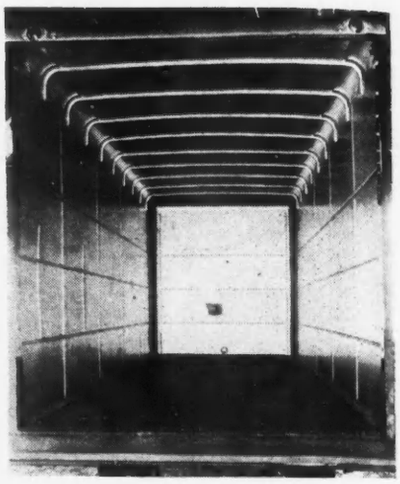
BY COSTING LESS TO RUN

Vocational Bodies

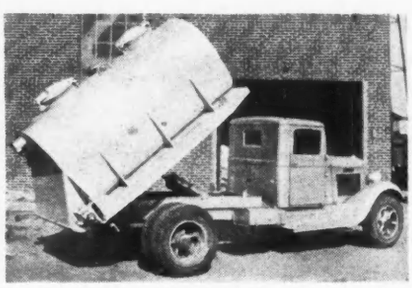
(CONTINUED FROM PAGE 73)

Walker Vehicle Co. converted this 1½ ton Ford chassis by shortening the wheelbase to 112 in. and mounting a low-aisle stand and drive body. One piece metal floor pan mounted on chassis side rails. Steel panels over exterior, galvanized iron on interior. Doors slide. Rear loading space is for 64 cases.





This special ribless constructed body built of Met-L-Wood for the Continental Can Co., was constructed by Leonhardt Wagon Co. Inside dimensions are 20 ft. 1¼ in. long, 91 in. wide and 7 ft. 10 in. high. Side panels are set vertically on the floor and braced with 3/16-in. spring steel straps. No rear doors. Tailgate is the width of the body by 2 ft. high.



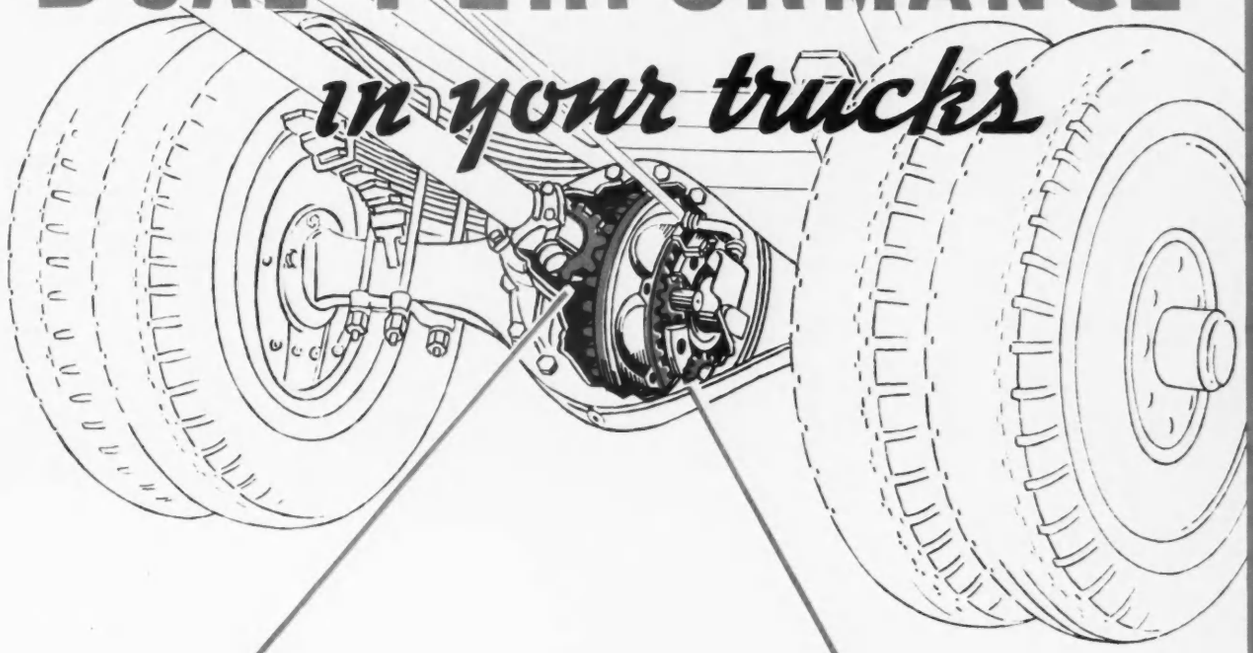
Heil built this special dust tight tank body 9 ft. long, 4 ft. wide and 48 in. high with a flat bottom. Special flour bin type chute at rear with manual control handle for opening and closing the chute. Aluminum manholes are 18 in. Hydraulic hoist is also Heil's. Minnesota Mining and Mfg. Co. is the operator.

Gerstenslager built this refrigerator body for Keystone Transfer. It is 14 ft. long, 6 ft. 8 in. wide and 6 ft. high, insulated with 2½ in. of Dry-Zero in the sides, ends and roof, and 2 in. of cork in the floor. Body is equipped with full-length rear doors and flush-type tailgate which fits into the doors. Interior is equipped with a 100-lb. dry ice bunker and a Taylor thermometer installed in the body with the dial outside. Chassis is a White.

(TURN TO PAGE 80, PLEASE)

A Better Axle
for 2 reasons
1..IT'S WELD-BILT
2..IT'S TIMKEN
You know one important fact about a trailer manufacturer who uses Timken Tubular Trailer Axles—a fact which commands respect:
he pays a higher price in order to give you the best axle equipment that can be had.
It is fair to believe that he is just as quality-minded about every other unit that goes into his product.
All parts of this axle are welded permanently into a single strong, efficient unit—rigid tubular beams of tempered steel; big spindles of alloy steel; heavy efficient brake drums; wide spaced, large sized bearings for wheel stability; accurately balanced parts—and Timken electric welding adds strength.
Another sign of superiority—Timken "T" Series 2-Shoe Brakes, for power braking, with Timken Adjustable Levers; smooth, positive, powerful in action; thoroughly dependable.
Not just an "axle for trailers"—but a superlative piece of design and workmanship: the Timken Weld-Bilt Tubular Trailer Axle.
TIMKEN AXLES
D A CO
THE TIMKEN-DETROIT AXLE COMPANY
DETROIT, MICHIGAN

You'll want this DUAL PERFORMANCE in your trucks



Overdrive PERFORMANCE

enables the truck to maintain any given road speed at greatly reduced engine R.P.M., or to travel faster and farther than normally on a specified number of engine revolutions.

Savings are made in gas, oil and engine wear . . loads move at more profitable speeds . . . more and faster trips are made over smooth highways . . . time and money are saved on every trip . . . earnings are substantially increased.

Operation of this HIGH or overdrive ratio is conventional . . . pinion to ring gear to axle shafts, to wheels, (the planetary gears being locked.)

The design of this axle provides for an extra large straddle mounted pinion and oversize bevel gear.

Underdrive PERFORMANCE

provides extra power . . . to make better time over many grades . . . to maintain normal speeds without shifting to lower transmission gears . . . to save time in hilly country, over rough roads or through heavy traffic . . . to start the heaviest loads more smoothly and get out of mud, sand, loose gravel and deep pits without "bucking" or "frogging."

Shock loads are softened and repair bills reduced. Driver comfort is increased.

The shift from Overdrive to Underdrive is made at any speed by moving a convenient lever. This brings the planetary gears into use, causing the unit to operate as a double reduction axle.

This reduction is silent . . . only four additional moving parts.

Any transmission gear can be used with either **OVERDRIVE** *or* **UNDERDRIVE** *performance, giving 8 forward speeds and 2 reverse speeds* . . . A GEAR FOR EVERY ROAD AND LOAD

EATON MANUFACTURING COMPANY

Cleveland, Ohio

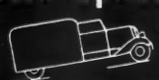
EATON 2 ★*Ruckstell* SPEED AXLE

★*Over 500,000 units of this design have been sold*

Built for FAST HAULING of Profitable Pay Loads..Over All Roads

FULLER

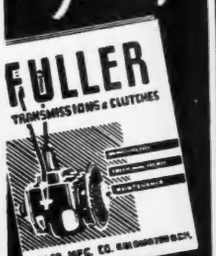
Five Speed



Transmissions

for Heavy Duty Trucking

Free!



This valuable manual tells how to obtain the best service from FULLER Transmissions. Complete data on operation, lubrication, and servicing. Write for a copy today.

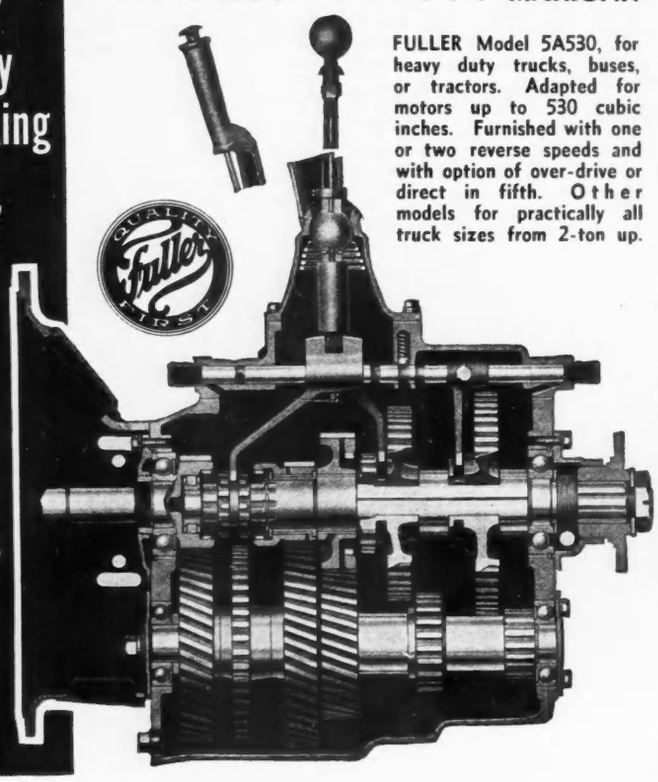
The FULLER'S flexibility and adaptability to every working condition is doubtless the greatest reason why truck operators like this transmission. Its range of five speeds forward, including 3 quiet helical gear driving ratios, provides the best combination of speed and hauling power for every road and load, with lower gas and oil consumption.

But more than that, the FULLER offers a well-balanced design providing all the qualities that a good truck transmission should have . . . simplicity of design . . . quality construction . . strength and dependability without excess weight . . . quiet operation . . . easy shifting.

It pays to use transmissions made by FULLER—who pioneered the heavy duty five-speed helical gear unit . . . whose facilities are devoted exclusively to the production of heavy duty truck transmissions.

FULLER MFG. CO.

KALAMAZOO . . . . . MICHIGAN

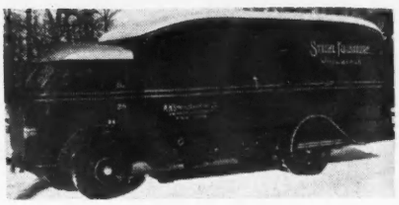


FULLER Model 5A530, for heavy duty trucks, buses, or tractors. Adapted for motors up to 530 cubic inches. Furnished with one or two reverse speeds and with option of over-drive or direct in fifth. Other models for practically all truck sizes from 2-ton up.

Vocational Bodies

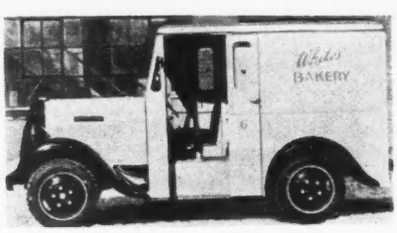
(CONTINUED FROM PAGE 76)

Mastercraft refrigerated body (left) by Luce Mfg. Co., is insulated with 3 in. of Dry-Zero in walls and doors, 5 in. in roof and 3 in. of cork in the floor to insure safe transportation of meat products. Interior of body is lined with galvanized sheet steel. Refrigeration is by natural ice in a 300 lb. bunker. Chassis is Dodge.



Eighteen-foot streamline furniture body built by Fitz-Gibbon to Crisp for Stiehl Furniture Co. The van has double doors on each side. Body construction is with oak frames and steel panels with plywood lining to the belt on the inside. Body dimensions are 18 ft. 7 in. long, 95½ in. wide and 80 in. high. Chassis is Autocar.

This handsome stake body was built for General Outdoor Adv. by Maremont Automotive Products, Chicago, using a White chassis. Compartments are provided in the frame below the floor between the cab and rear wheels.



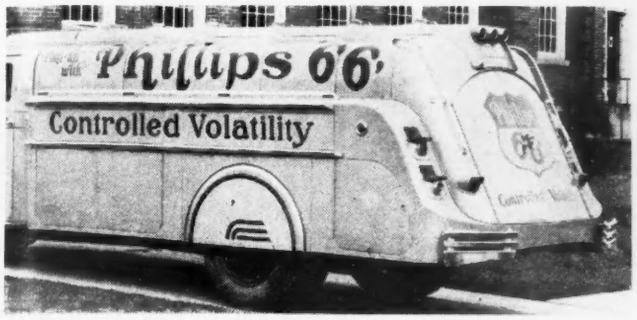
This door-to-door type bakery delivery truck on a Dodge chassis offers no impediment to the driver's movements getting in and out and reaching for his merchandise.

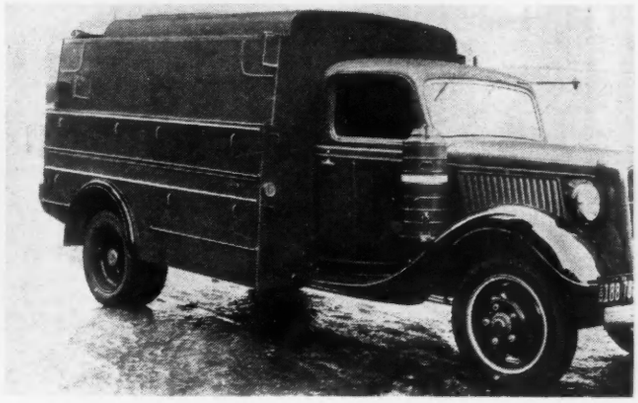
Fruehauf designed and built this semi-trailer for Johns-Manville for its safety school tour. Trailer is a model W-623-DF. Frame is 24 ft. 4½ in. long, 6 ft. 8¼ in. wide. Maximum load is 15,000 lb. Body is type B de Luxe, with plymetl panels.

(TURN TO PAGE 83, PLEASE)

Vocational Bodies

(CONTINUED FROM PAGE 80)





Top—Right

Baker-Raulang all-steel line construction body on a Ford chassis. Body feature is the telescoping steel roof. Body is arranged with compartments for materials and tools.

Top—Left

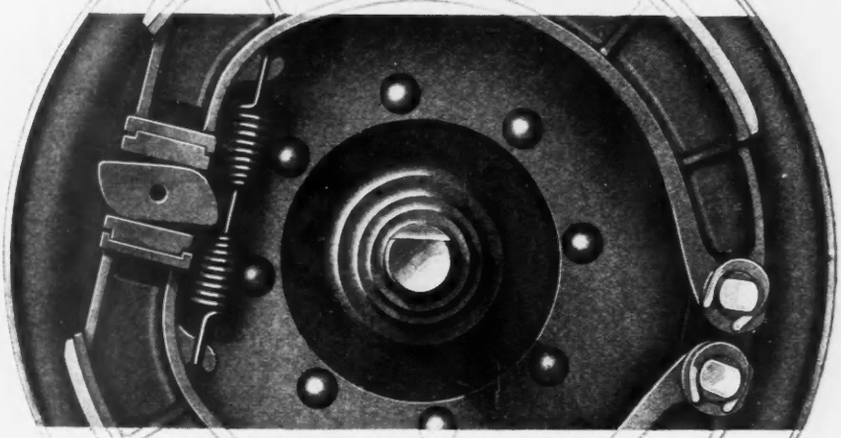
Aluminum tank truck built of 1500-gal. capacity by Heil. Aluminum hinged fillers are 8 in. in diameter. Beaver tail rear is fitted with side swing doors. Underslung boxes and wheel houses have built-in cabinets ahead and behind rear wheels, and a package compartment below the run-boards, with concealed remote control for panels. Chassis is a 200-in. wheelbase Dodge.

The Women's SPCA of Penna. operates this IHC Model C-1 animal ambulance specially for sick and injured dogs and cats. Sick animals are placed in the top wicker-covered section. Section with ventilators is for live dogs and that section with the SPCA sign is the death chamber lined with galvanized iron and coated with aluminum paint. Carbon monoxide from the motor is run through a cooling tank and into this asphyxiation chamber 40 in. high and 2 ft. wide, and in five seconds a suffering animal is put out of its misery. A sliding bottom drops dead animals into a drawer below the death chamber. Body by Lyter Body Co., Philadelphia.

Federal Gets War Dept. Award

Federal Motor Truck Co. has been awarded by the War Department a contract for 193 trucks to cost approximately $250,000. February sales were about 30 per cent larger than a year ago.

a BRAKE



with a well-earned sense of superiority...

Here is A BRAKE!—simple, wholly dependable, proved by millions of low-cost miles—the Timken "T" Series Brake for trailers.

And that is not its only proof—it is rust-proof; rattle-proof; chatter-proof; as near trouble-proof and failure-proof as a brake can be.

▼ two rigid, symmetrical, reinforced shoes—controlled uniform braking in both directions
▼ individual eccentric anchor pins adjustable from outside; rust-proof; no "servo"
▼ rigid backing plate
▼ "Constant-Lift" cams of hardened alloy steel—uniform pressure in every position and degree of lining wear
▼ special cam plates to resist cam pressure; tough hardened steel; can't loosen
▼ "Twist of Wrist" Adjustment—quick, easy, micromatic—with Timken Adjustable Lever (Patent Pending). Simple, rattle-proof, rust-proof

these advantages, exclusive to Timken "T" Series Brake, will pay you generous profit in efficient operation and definitely lower costs.

Specify Timken "T" Series Brakes for trailers.

TIMKEN AXLES

THE TIMKEN-DETROIT AXLE COMPANY
DETROIT, MICHIGAN

Universal Shop Equipment

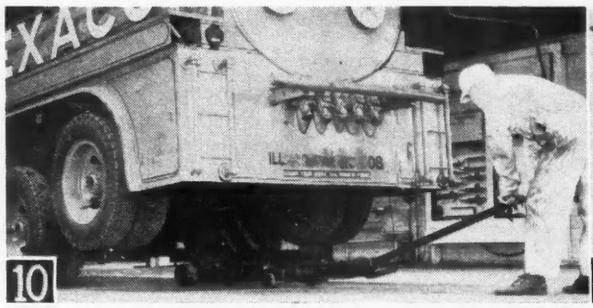
(CONTINUED FROM PAGE 37)

dangerous as neglecting to buy it in the first place. Mechanics lose time and get hurt attempting to operate worn-out jacks and car horses.

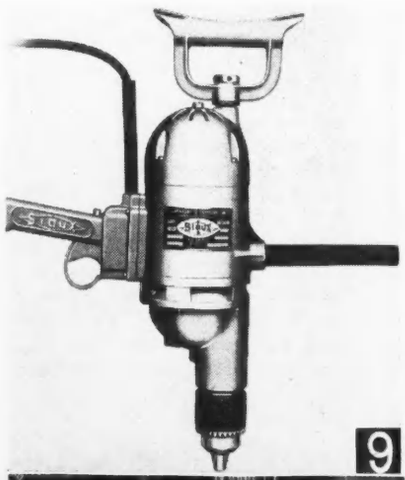
DRILLS, of course, are required daily in shop operation. Ninety-two of 104 fleet shops have drills, however, this fact is not sufficient evidence that these same shops have enough drills, that they have suitable drills, or that the drills that they have are in good condition.

Drills, in addition to their normal use of making holes, can be used for many other purposes, such as reamer and brush drives. New models weigh less and are designed to make them possible to use in inaccessible locations and for that reason old drills are nearly as uneconomic as no drill at all.

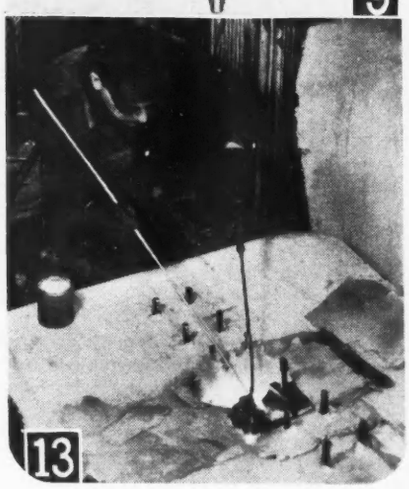
(TURN TO PAGE 86, PLEASE)



10—Weaver garage jack handles the heavy-duty trucks with the greatest of ease. 11—Blackhawk hydraulic garage floor jack has high lift feature



9—Sioux electric drill for heavy-duty work.

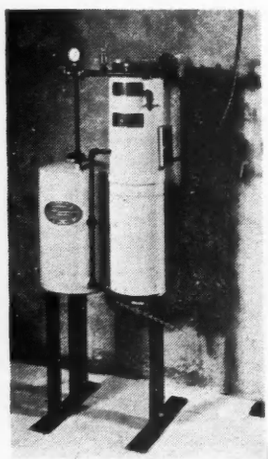


13—Welding a main bearing webb with Air Reduction Sales Co. equipment. Note how operator has protected crankcase.

Why THROW AWAY YOUR SHIRT?

You wouldn't throw away your shirt just because it's dirty . . . a shirt may be somewhat worn after the first wearing but the oil drained from your crankcase is only dirty . . . using a STREAMLINE FILTER, you can clean it OVER and OVER and OVER again, making it as good as new oil in the crankcase.

SKINNER PURIFIERS come in a complete range of sizes, adaptable to any volume of operation—ranging in price from $135.



Write your name and address in the margin of this advertisement and we will tell you how 94 to 98% of your total crankcase drainings may be recovered and at an average cost of five cents per gallon.

ALREADY, MILLIONS OF GALLONS ARE PURIFIED ANNUALLY WITH

SKINNER PURIFIERS

SKINNER PURIFIERS INC.
2221 DALZELLE DETROIT, MICHIGAN

HENRY BEEP is a specialist in clutch disorders. If you needed clutch service you couldn't go to a better man. But his business has gone to the dogs.

Henry has gloomily figured out the reason... it seems that Borg & Beck makes a big percentage of the original equipment clutches in today's motor cars, and makes them very well indeed.

So, for increasingly large numbers of motorists, the necessity of invoking Henry's aid has been removed. It's hard on Henry but a grand thing for our customers—and theirs.

We've earned a fine reputation by building our clutches so well that they can be "installed and then forgotten." And, our ability to get those clutches to your production lines *when you want them* has, we believe, added lustre to the Borg & Beck name.

It looks like Henry should diversify.

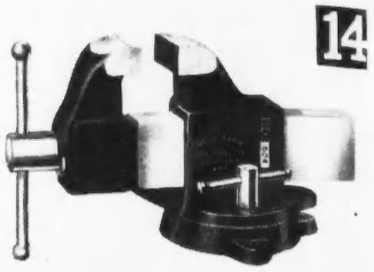
BORG & BECK DIVISION
BORG-WARNER CORPORATION
CHICAGO, ILLINOIS

(CONTINUED FROM PAGE 84)

policy of retiring vises at the end of three years' service and after some years of following this policy the company is satisfied that it is economical procedure.

Despite the obvious advantages of working with modern equipment, we find mechanics working under trucks which, instead of being on horses, are down on the wheels with the result that there is no elbow room for the mechanic to operate. When a unit is removed the mechanic has a real job to get the unit out from under the truck where he can work on it. When he does get it out he often wrestles with it on the floor because there is no vise of the correct size for that type of work or if there is another mechanic is using it.

SIXTY-FIVE of 104 fleets have welding equipment. Most of them are anxious to add to it to make their equipment more complete to take in a larger range of work. Again the puzzle is present: what do the other 39 fleets do?



14—Columbian vise; 15—ACCO vise. Bench equipment which no service or fleet repair shop can do without

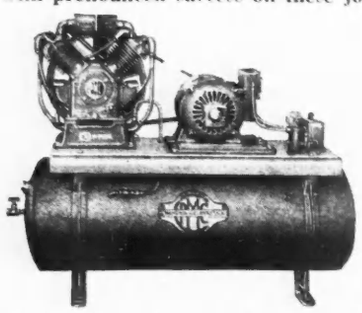
Either they have to send their welding work out and pay some shop a handsome profit on many very simple operations or they are forced to buy many expensive new parts because they are unable to repair the old ones. Some of the shops that have welding equipment and are fond of it not only repair broken metal parts and make new ones but they actually build up a new surface to compensate for wear. The amount of salvage possible with a welding outfit is enormous. An expenditure of less than $100 makes a fleet shop eligible for these economies to a degree dependent only upon the skill and resource which the operator develops.

A new piece of shop equipment has made its way into the universal class. It is in effect a jack or ram with complete fixtures to make it possible to use the power in any direction while the ram is in any conceivable position. It can be used for straightening or as a wheel puller or for any purpose where power on tap is required.

The obvious conclusion is that there are some pieces of all-purpose equipment that are really essential to any kind of shop operation and expecting to maintain a fleet without them is like expecting to cook without heat. These can be presented from an economy or from a safety standpoint, but any analysis shows that the shop simply cannot get along on any reasonable basis without them.

Keep Your Fleet Spick-and-Span And Rolling all the Time!

A neat-appearing sparkling fleet is more than just good advertising. It's economy and thrift.
It is amazing how bright and serviceable a CHAMPION Air Compressor and a CHAMPION Car Washer can keep a fleet.
Besides its obvious application in inflating tires, the CHAMPION Compression is used with pronounced success on these jobs:



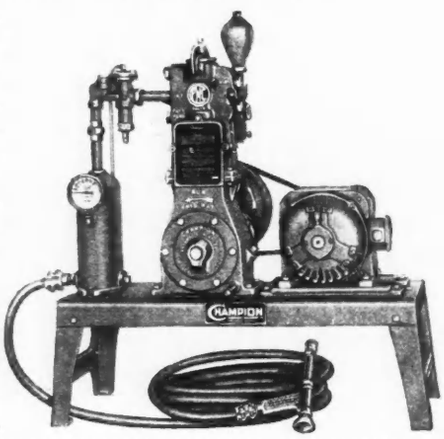
FOR OPERATING:	AND FOR:
Paint Spray Guns	Removing chips
Lifts	Cleaning parts
Tire Changers	Flushing radiators
Engine Cleaners	Testing radiators
Lubricators	Testing inner tubes
Air Hammers	Cleaning fuel systems
Engine Hoists	Cleaning upholstery
	Removing water

Greater demand upon air compressors calls for the use of larger units. CHAMPION OE-42, shown above, is a two-stage, 4-cylinder equipment and has a displacement of 23 cu. ft. It is particularly designed for such heavy duty as is imposed by a large and active fleet.

CHAMPION CAR WASHER

The gun on the Champion One Gun Washer, pictured here, delivers water at a pressure of 300 pounds. The stream from the gun is instantly adjusted by a slight turn of the handle from a powerful gusher for knocking off encrusted mud and grease from chassis, to a fine spray mist. It is impossible to injure the body finish with this washer. Other CHAMPION washers of from 1 to 4 gun capacity.

Mail the coupon for complete details.



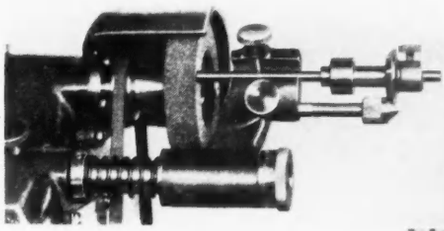
CHAMPION
PNEUMATIC MACHINERY CO.
8174 So. Chicago Ave., Chicago, Ill.

Champion Pneumatic Machinery Co.,
8174 So. Chicago Ave., Chicago, Ill.
Please send me complete information on:
....CHAMPION AIR COMPRESSORS ....CHAMPION CAR WASHERS
Name .....
Address .....
City ..... State .....
My Jobber's name is .....

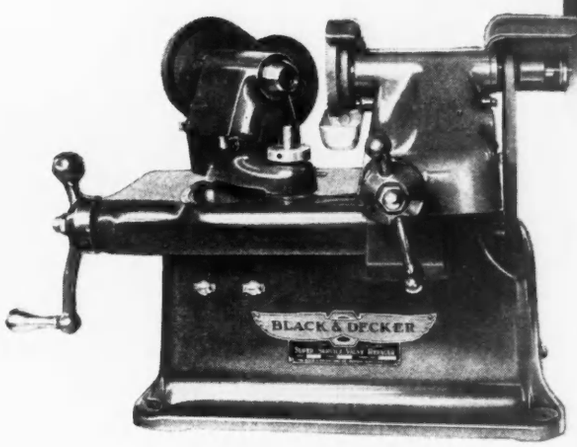
No other VALVE REFACER

is So Fast . . . So Accurate . . . So Versatile . . . So Dependable . . . So Profitable to Own

HERE IT IS! Black & Decker's newest, fastest, finest Valve Refacer—with every feature designed to cut maintenance costs on your motor fleet. It's a big, sturdy machine—belt driven by *two* Universal Motors—and built for years of dependable service. Extremely simple and easy to operate, this new Refacer quickly puts a new, true-fitting face on any passenger car, bus, truck, tractor or airplane valve, of any stem diameter from 5/16" to 11/16", at any angle from 0° to 90°. And it does many more jobs—in addition to refacing—as you'll discover by reading the facts below.



GRINDS FORD VALVE STEMS: Special attachment measures, grinds and squares Ford "A" and "V-8" Valve Stems for correct tappet clearance to exact thousandths of an inch in a few seconds. Saves hours of guesswork.



FASTER: High speed feed screw combines screw-feed accuracy with lever-feed speed. Two powerful Universal Motors start faster, grind faster, won't stall. It's the fastest refacer ever built.

DOUBLE DUTY SPINDLE permits use of attachments for cleaning and burnishing valves and valve stems, and for many other grinding, buffing, cleaning and polishing jobs, without disturbing refacing set-up.

See this great new refacer at your jobber's—and write for our new 1936 catalog today. The Black & Decker Mfg. Co., 732 Pennsylvania Ave., Towson, Md.

BLACK & DECKER

UNIVERSAL SUPER-SERVICE VALVE REFACER

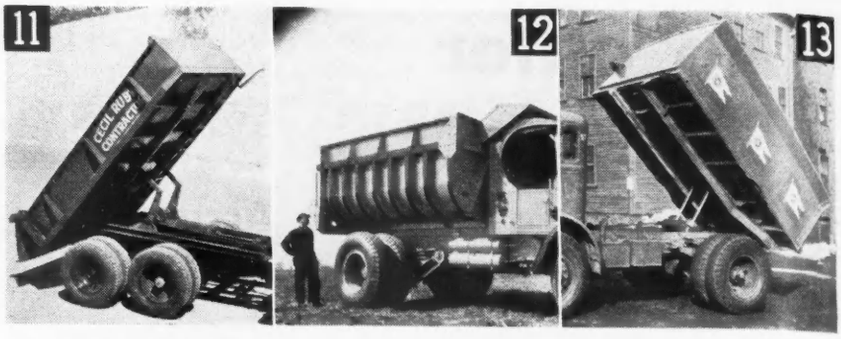
A Product of the World's Largest Manufacturer of Portable Electric Tools

Dump Bodies and Hoists

(CONTINUED FROM PAGE 35)

to the four already mentioned. Progressive municipalities throughout the country have found that tractor-trailer dump units may be used to good advantage in waste collection.

THANKS to modern methods of fabricating metals and construction materials, operators may realize the maximum in payloads because of the use of light-weight materials in constructing



11—Perfection Steel body with dump hoist equipped with two arms set apart resulting in even body lift. 12—Heil built coal dump body equipped with hydraulic hoists. 13—Dump body built by Eastern Car & Construction with steel cradle supporting body on outside

dump bodies. Aluminum has been introduced as a body-construction material, reducing body weight and increasing payload. In the last five years much has been done to lighten steel, and the stainless steels used today are also great weight savers, permitting increased payloads. Among other kinds of light-weight material is an alloy known as copper-steel, designed for lighter-weight construction.

The demand for lighter-weight bodies has also been accompanied by the need for stronger construction. One improved form of construction is the elimination of side-bracing members. This permits smooth surface construction and rounded instead of square corners. In such construction, light stanchions bent into cradle-shaped beams support the body from the exterior. Both seamless construction and electric welding have marked improvements in construction methods.

The dump body, too, has gone modern and improved construction has been matched by improved design. Taking the streamlining cue, dump bodies have been rounded at the nose or tapered to give them more pleasing lines.

THE dump body is pushed into action by the hoist. The job of the hoist is to furnish a strong, slow push under a body by converting fast engine speed into power for lifting, and at the same time change direction of the power and apply it where needed. Gearing will change its direction, and this construction is a mechanical hoist. These hoists operate in a number of different ways. Cranks on gears change rotary motion into lifting in an arc of a circle. Applying power to a screw jack type of mechanism is another way of raising dump bodies. The principle of the hydraulic jack has been incorporated into a number of hoists. Placed horizontally they are coupled to cranks or links or

(TURN TO PAGE 90, PLEASE)

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Here are the factual findings and recommendations of one of the nation's foremost authorities upon public highway safety. It is based upon an exhaustive survey made over a period of years. It tells you the cause and prevention of automotive accidents. It tells you how to secure substantial savings in maintenance, operation, gas and oil; how to make auto, truck and fleet drivers more efficient. It is packed full of facts . . . a gold mine of invaluable information for every person driving, operating or servicing a car, truck or fleet. The booklet is free. . . . Write for your copy now.

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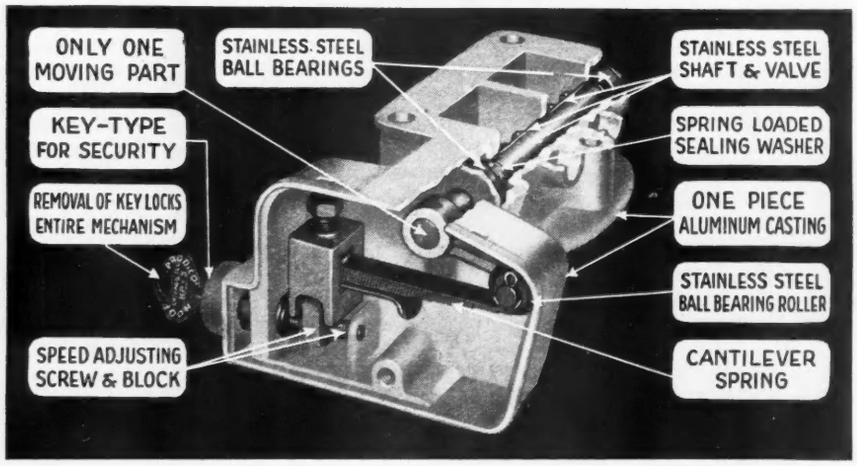
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SPRING LOADED SEALING WASHER
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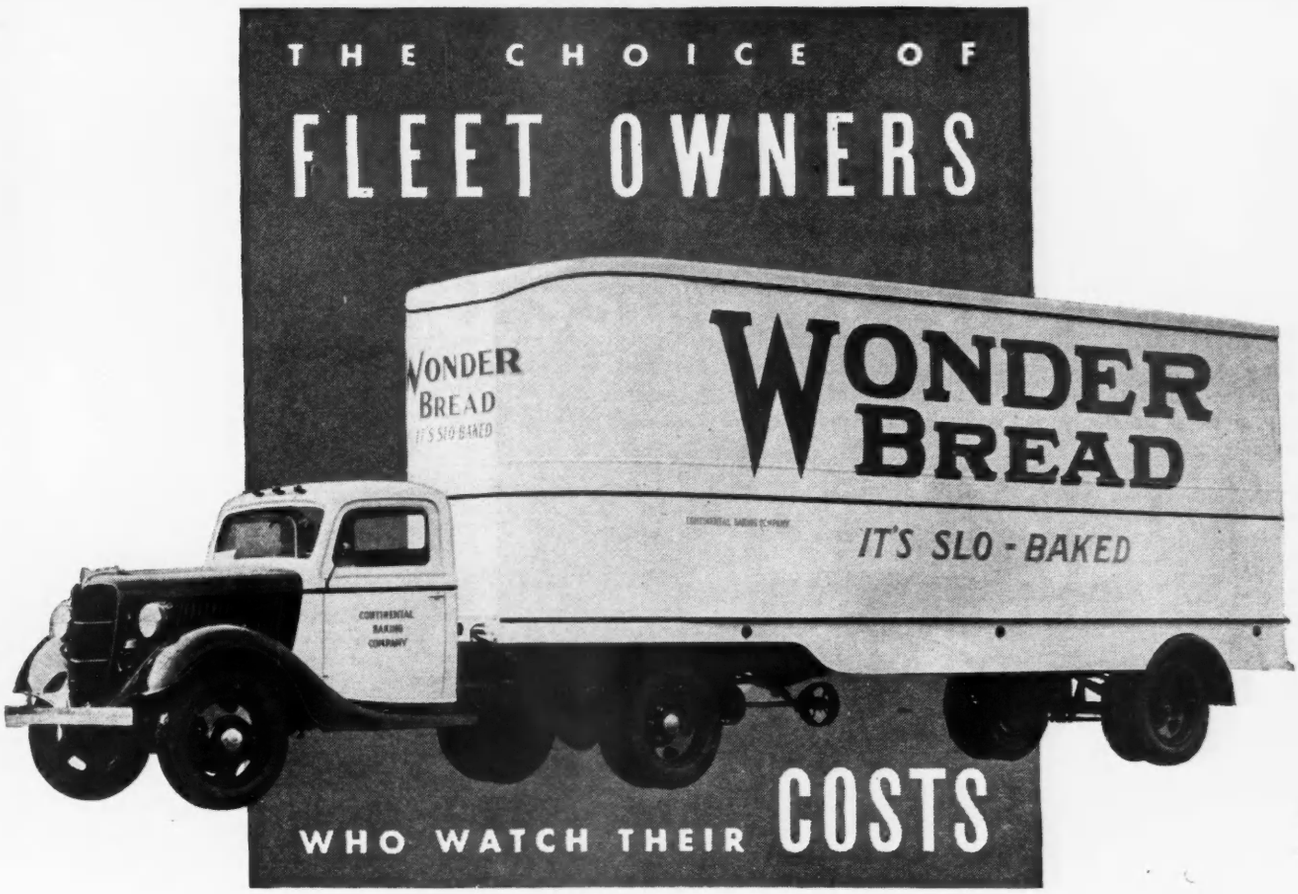

ALL fleet owners keep accurate records of truck and commercial car operating costs. But these records are meaningless unless they are carefully analyzed and made the basis for future purchases. Since ALL expense items are entered in these records, they must ALL be considered in determining relative economy.

On this basis, owners' records show that V-8 Economy is OVER-ALL ECONOMY. Savings are not limited to fuel and oil costs. They include repair costs, capital investment, depreciation, interest, taxes, license fees, wages, insurance and tire costs. Only when you consider the savings Ford V-8 Trucks and Commercial Cars make in ALL these items do you get the full meaning of V-8 Economy.

Many of these savings are not revealed until your Ford V-8 Truck or Commercial Car has traveled tens of thousands of miles. But a trial trip will reveal some of them to you . . . and enable you to judge V-8 Performance with your own loads, under your own operating conditions. Call your Ford dealer today and set a date for an "on-the-job" test.

• • •

Any new 112-inch wheelbase Ford V-8 Commercial Car can be purchased for $25 a month, with usual low down-payment. Any new 131½-inch or 157-inch wheelbase Ford V-8 Truck can be purchased with the usual low down-payment on the new UCC ½% per month Finance Plans.

FORD V-8 TRUCKS AND COMMERCIAL CARS

(CONTINUED FROM PAGE 88)

work against cams. Mounted vertically at the front of the body they exert a direct lift by cable or, positioned under the body, they push upward. Vertical cylinders under bodies are mounted on trunnions to take care of changing angles during lift.

Shift in the load itself affects the lifting process but not the smoothness of its operation. By means of variable leverage, greatest push at slow speed is exerted against the load as the lift starts, but as the load is raised and more weight is thrown on the hinges, less push at greater speed is applied. The characteristics of different materials have come in for consideration in designing dumping units as witness the various tipping angles, intermediate stops, smooth body sides and body shakers. The shaker, which functions automatically, eliminates the costly truck-rocking practice resorted to so frequently.

THE shaker-type hoist offers an unusual feature in a lifting unit for dump bodies. The shaker operates on a hydraulic hoist. Its function is the varying of the oil pressures inside the cylinder, causing the body to shake only at full-tipped angle of body for dislodging clinging materials. The shaker may be controlled at will by the operator and the effects of its action are not transmitted to the truck frame.

The hydraulic-booster hoist is built to meet the demand for a hoist for platform bodies. The feature is that the

14—Gar Wood 6-cu. yd. garbage collection dump body. Sliding rail covers operate on steel rollers. Hoist is Model D 55

mounting height of the platform is no higher than the original platform installation. The booster hoist may be used with express type bodies as well as platforms, doubling the utility of the unit. For heavier units, heavy-duty hoists are available with single or twin cylinders. These are powerful hoists for the toughest type of job. The longitudinal cylinders are either mounted

15—Side dump body and hoist built by Anthony Co., Inc.

on trunnions to take care of the changing angle or the cylinder forces rollers along a horizontal track causing the body to lift. There is also the telescopic hoist which looks and functions like a telescope.

The vertical hoist is designed for platform and low-type bodies. The vertical hoist is featured by the fact that it takes up very little space (from 6 to 8 in.) behind the cab. Due to its mounting location, it cannot increase the

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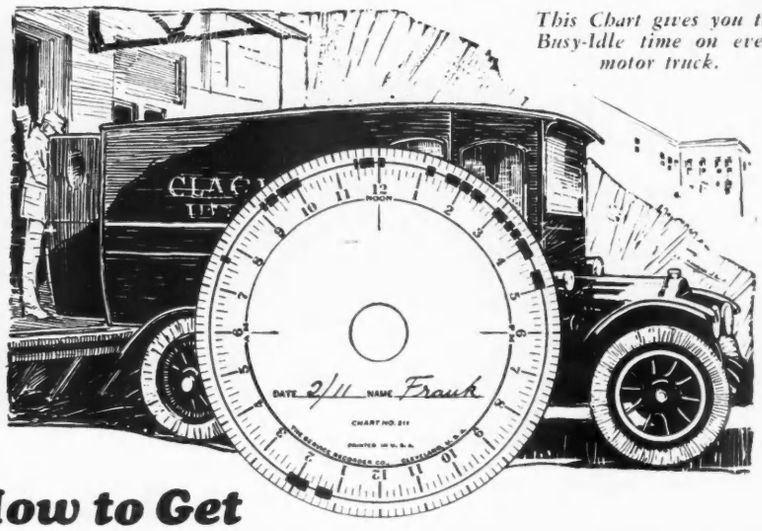

This Chart gives you the Busy-Idle time on every motor truck.

How to Get

THAT "EXTRA TRIP PER DAY"

"WE are now getting an extra trip per day!" report many *Servis Recorder* users. How is it done? Often merely by eliminating a 20 minute or 30 minute delay. Suppose this: "The truck gets home at 4 o'clock, and it doesn't quite pay to send it out on another trip." If the truck had got home at 3:30 then it would have paid to make the extra trip. Same thing at noon: "Here's the truck coming in at 11.15. Well, let's see, it's almost lunch time, so we'll wait till after lunch before we send it out."

HOW TO CORRECT IT

This is a thing which happens again and again and generally it doesn't correct itself, until the *Servis Recorders* are installed and their charts show daily all wasted time—all delays. Suppose you operate six trucks, and you get an extra trip per day with *each* truck! It means you can probably cover your present territory with five trucks, thereby saving three or four thousand dollars a year!

THE SERVIS RECORDER

"Keeps Trucks Busy"

Send today for booklet—"Ten Ways of Getting More Work Out of Motor Trucks."

THE SERVICE RECORDER COMPANY,

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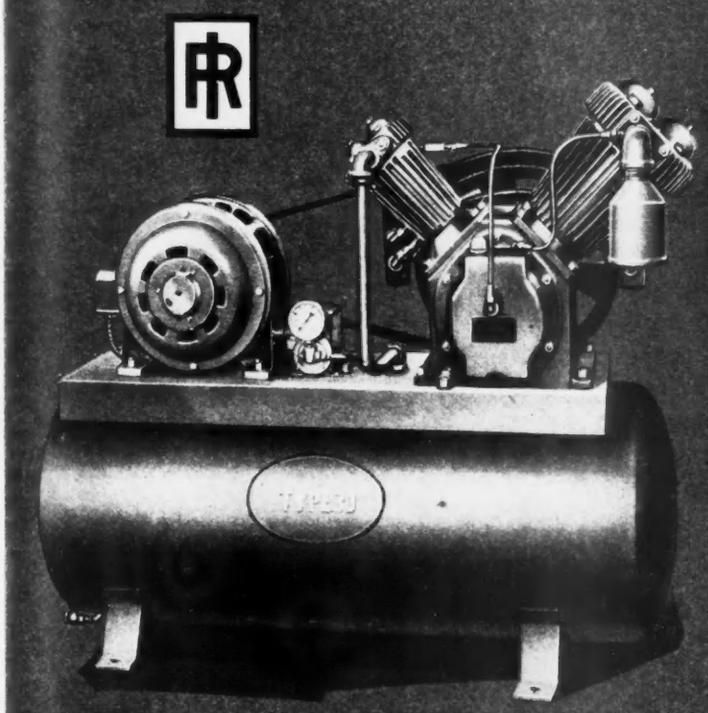
Check these MONEY-SAVING COMPRESSOR FEATURES

IR —THE SYMBOL OF COMPRESSOR QUALITY

✓ Two-stage units rated for continuous operation at 200 lbs. pressure • Complete range of sizes—¼ H.P. to 15 H.P. • Piston displacement—1.2 to 68 cubic feet per minute • Designed for your service by engineers of largest air compressor manufacturer in the world.



✓ **HIGH OPERATING ECONOMY.** Ingersoll-Rand two-stage Type 30 compressors deliver more air per kilowatt of current consumed.

✓ **LOW MAINTENANCE COSTS.** The troublesome check valve is not used on I-R two-stage compressors. I-R plate valves are practically unbreakable and do not warp. These and other features make less work and expense for the maintenance department.

✓ **MOTOR PROTECTION.** Totally enclosed, dustproof mechanical centrifugal unloader permits unit to start and stop without load on motor. Ball bearings are standard equipment on integral H.P. motors and Type 30 Compressors.

✓ **DAY-IN-AND-DAY-OUT DEPENDABILITY.** I-R two-stage units are built to withstand non-stop operation at 200 lbs. discharge pressure. They stay on the job, supplying air for the business-attracting and profit-making equipment in service station or shop.

Sold by leading jobbers everywhere.

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(CONTINUED FROM PAGE 90)

height of the platform. Vertical hoists are of several kinds. There is the vertical hoist with cable attachment. Another is the high-lift hydraulic-telescopic type.

ONE type of hoist commonly used on coal and ice trucks is the direct high-lift hoist with telescoping front end. High-lift hoists are designed to dump when elevated for coal delivery or to keep the body level when servicing refrigerator box cars.

Another type of hydraulic hoist does not exert piston push directly against the body. Instead, the piston pushes away from the body. The outward motion of the piston actuates two lifting arms connected to it by pull-rods and chains. These arms impart an upward lifting motion to lifting links directly under the body. This construction is to avoid excessive weaving or twisting of the body. Still another hoist featuring a 77-deg. dumping angle is a direct lift, double-acting type, and when extended, the body is within 13 deg. of being in a vertical position. With this unit, after the body reaches a 50-deg. dumping angle the center of gravity of the load passes beyond the center of the hinge. The hoist is equipped with a hydraulic check which then cushions the load to the extreme dumping angle controlling the speed of the lift throughout the entire dumping operation. The body may then be brought back to normal position entirely by hydraulic power or merely brought back beyond the center of gravity from which point it will return by gravity. Of course, the body may be locked in position at any angle.

ONE of the most interesting developments in dump body hoists is a type that eliminates gears and oil lines completely and reduces the number of working parts to one. This hoist gives equal power for raising or lowering and automatic locking at any angle. There are no exposed parts and the hoist will lift a 12,000-lb. payload. It is quite new and a departure from the principle of conventional hoist operation. A 3-ton tailgate weight does not affect the smooth lifting or lowering operation of the body.

Having dumped this dope on dump bodies and hoists in your lap to be lapped up in your own way, we hoist away.

DIETZ "QUALITY" LAMPS AND MOTOR SIGNALLING DEVICES

DIETZ LAMPS

FROM the "horse and buggy days" of nearly a century ago to the present era of fine motor buses and trucks, Dietz Lamps have evolved to meet the service requirements of the times, but without deviation from the high standards of quality and serviceability for which they have always been celebrated.

The attempt to reduce motor casualties is bringing about many improvements in bus and truck lighting, together with clever signalling devices to safeguard both heavy vehicles and the traffic through which they move.

When providing new equipment of this nature for your fleet, remember the reputation, dependability and good value you buy in Dietz products.

Your Dealer can supply you with Dietz Lighting Equipment. You may also find it worthwhile to have our complete Catalog. Let us send you a copy!

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HEAD LIGHTS • TAIL LIGHTS • MARKER LIGHTS • DITCH, FOG & SPOT LIGHTS • DIRECTION SIGNALS
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Sparkling Trucks Are Business Gems

(CONTINUED FROM PAGE 33)

of beauty are easily portable, economical and highly effective. They may be used on curved as well as flat surfaces on metal, fabric, wood and composition. The principle of "floating" has been applied to the movement of block and pad on one type of polisher. Motors and construction have been improved.

AMONG the useful equipment in the paint shop is the spray gun enabling one man to dress-up the appearance of a truck in a few hours. As one manufacturer aptly put it, the spray gun passes the most rigid tests with flying colors! The atomizing principle has made the air gun and the spray gun what it is, so that fleetmen may use these units to make trucks a thing of beauty. But since the discovery of the atomizing principle, spray guns have improved considerably. The introduction of synthetic enamels necessitated certain changes in the gun. Synthetics dry more slowly than lacquers. Manufacturers had to meet the problem by designing spray guns with improved atomizing systems and spray patterns,

(TURN TO PAGE 95, PLEASE)

(CONTINUED FROM PAGE 92)

better adjustment and easier handling and more fool-proof design.

New type guns are designed to spray modern finishing materials with greater efficiency, producing higher quality finishes with less effort and at lower cost. There is costly waste in the use of old, worn, obsolete equipment. New spray heads have larger port openings and improved jet air caps which produce better spray patterns and more uniform application.

In the battle for beauty truck operators must not only use the most improved guns but also employ the best beauty technique. Part of this technique is the proper volume and pressure of compressed air so essential in the operation of a spray gun. Correct air pressure depends on the weight of the material, the size and kind of spray pattern, speed of operation, etc. Air pressure is perhaps the most important factor in the proper technique. It is important, therefore, that in selecting an air compressor for the operation of a spray gun, careful consideration be given to the factors of volume and pressure. Assuming that the compressor is producing compressed air in the proper volume and at the correct pressure, the next consideration is the hose used to convey this volume and pressure to the spray gun. This is important and many fleetmen fail in their beauty quest because they use the wrong type or length of hose. For instance, the pipe take-off from the main air line to the transformer of the compressor should never be smaller than $\frac{3}{8}$ in. Common sizes of spray gun hose are $\frac{1}{4}$-in. and 5/16-in. inside diameter.

SELECTION of compressors for use with spray guns is only the beginning in the selection of compressor equipment for beauty culture. The air compressor is used for a variety of purposes, such as operating washing units, hoists, tire lines, spring oiler, grease gun, etc.

In selecting a compressor, several things must be considered. The most important are the total volume, pressure, peak load and future air requirements. If the compressor is used only for paint spraying, the compressor size is easily determined. But a compressor used for general purposes should be chosen carefully. Manufacturers usually furnish charts on which are listed various shop equipment and their air pressure and volume requirements.

Another guide in the choice of a compressor, of course, is whether or not required capacity of a compressor falls within the one or two-stage type. The one stage, of course, has its capacity limitations. In the two-stage type it is a matter of personal choice.

One line of compressors now differs from some others in that a straight shaft with an eccentric drive is used instead of the throw crankshaft and connecting rod. In this model the eccentric strap is made of bronze with a large bearing surface, and flex valves eliminate noise. A common improvement in all compressors aims at the reduction of heat generated in the process of compressing air. This major function of a compressor offers an important engineering problem, and improvement of compressors in this respect has always been uppermost in the minds of engineers. Consequently, intercoolers have been improved with the use of fins in various manners. Now air enters the tank at a lower temperature. Redesigned belt drives provide smoother operation, eliminate slipping, vibration and noise.

The two-stage compressor seems desirable in cases where air pressure needed is in excess of 150 lb. Simplicity is important in an air compressor and to this end manufacturers have simplified valve assemblies while cylinder heads have been made easier to remove. Durable, rugged and simple, the modern compressor is efficient and economical.

This is the NEW Vel-Vac Hand Control Valve *for*

NOW $11.75 COMPLETE
With mounting bracket, gauge, and hose fittings.

1. IMPROVED TRAILER BRAKE CONTROL
2. CALIBRATED BRAKING PROGRESSION
3. INSTANTANEOUS APPLICATION AND RELEASE
4. HAIR TRIGGER ACTION MATCHED WITH DEPENDABILITY

A better hand control valve for less money! Sounds funny? Well, it's true on every count. If you want the last word in a balanced hand control valve specify our V-33 DeLuxe Model as illustrated. This same valve, the V-33 Standard, complete with bracket and hose fittings minus the dial is only $8.75. Built to outlast the life of the vehicle—smooth—accurate—completely controllable—this Vel-Vac Hand Control Valve can be set for any desired degree of braking action and will hold it until changed by the operator.

Vel-Vac ENGINEERED PACKAGED UNITS

VEL-VAC for... PUNTIER Power Brakes

Be sure to get our new Vel-Vac Manual on Power Brakes and accessories. It's free.

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FREE: This Technical Power Brake Manual mailed when request is on company stationery.

POWER VEL-VAC BRAKES

New Products On Parade

(CONTINUED FROM PAGE 40)

Hackett Wiper Blade

THE new Hackett 7-ply rubber windshield wiper blade rolls in action, so there is no bending of the rubber, resulting in long life. It is equipped with a universal spring clip which is adaptable to all types of arms. The blade shell is made of chrome plated brass in 7¼, 8 and 9-in. lengths. Hackett Products Co., Inc., Providence, R. I.

Trouble Light

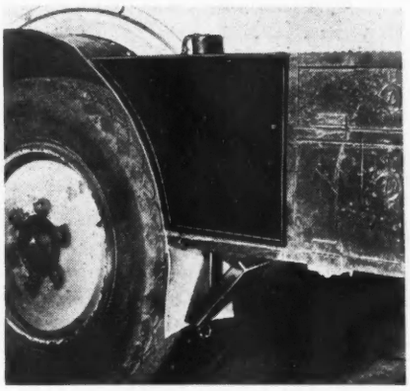
S & M LAMP CO., 36th & Broadway, Los Angeles, Cal., has put on the market the No. 757 Trouble-Lite that has a 3-way switch and a 2 filament bulb, providing for either 3 or 21 candlepower. The light is clamped on top of a standard 5-cell dry battery. The retail price, less the battery is $12.

Hot-Shot Grease Tool

HOT-SHOT grease tool can be attached to the conventional grease gun for injecting grease between the spring leaves. The tapered end which is driven between the leaves, contains a small hole through which the grease is fed. This tool is a recent product of the National Machine & Tool Co., Jackson, Mich.

Nichols-Lintern Sander

THE Nichols-Lintern Company, Cleveland, Ohio, has developed two sanding devices, one air operated and the other electric, which are designed to aid drivers in starting and stopping their trucks on wet or icy streets. The type V-40-R sander valve, air operated, may be used with either sand

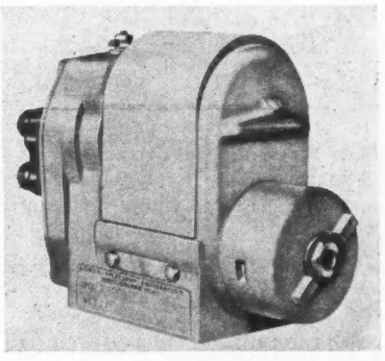


Sander aids starting and stopping

or screened cinders. It is mounted with a sand hopper in front of each driving wheel and controlled from the driver's seat by a three-way valve. The type V-47-R electric sand valve is available in either 6 or 12 volt applications, and is mounted in front of the driving wheels and operated by a push button. These sander valves come complete with fittings but without sand hoppers.

Edison Magneto

THE Edison-Splitdorf Corporation, West Orange, N. J., announces a new type CD Edison magneto for engines of six cylinders and under. It is of the completely enclosed type and is available with either base or flange mounting. Of the inductor type, its rotating member is a solid die



Type CD Edison magneto

casting, the function of which consists in periodically reversing the direction of the magnetic flux through the coils. The circuit-breaker cam is made of a porous bronze, with a projecting sleeve exposed to the lubricant in the distributor bearing compartment. Cam lubrication is therefore automatic.

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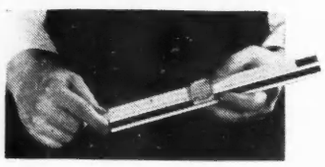

Solving

temperature troubles in insulated trucks

If you merely guess at the insulation requirements of your truck you are inviting temperature trouble. Whether your truck is refrigerated, or operated at pre-cooled or normal temperatures, your insulation requirements must be carefully calculated. The difference between ample and insufficient insulation may actually be the difference between profitable and unprofitable operation. Don't guess. Instead, let Dry-Zero engineers figure your requirements.

WHEN you buy Dry-Zero Insulation you know exactly how much protection you are getting. Because Dry-Zero has been tested and retested by independent engineers and laboratories, by body builders and truck operators. What they say — not what Dry-Zero claims—is the basis for the selection of Dry-Zero Insulation for thousands of trucks.

Expressed in an engineering term, the efficiency of Dry-Zero Insulation is .24 B.t.u.

This efficiency never diminishes. It lasts for the life of your truck. This means that for the full life of your truck you are sure of ample protection, and the lowest possible refrigeration cost.

This fact is proven by operator experience. Operators have torn apart old bodies and found the Dry-Zero as good as new. They have transferred Dry-Zero Insulation from old bodies to new ones and found it just as efficient.

This quality in Dry-Zero Insulation is permanence. It is proof that Dry-Zero does not settle or disintegrate, that it never molds or develops odors, that it is immune from rot.

To insulation efficiency and permanence is added a third quality which gives added service to Dry-Zero Insulation—lightness. It is so light in weight that little is added to the deadweight of the truck. This gives an actual money saving in ton-mile operating cost, year after year. It allows more pay-load. It is the third factor in low operating costs which distinguishes the Dry-Zero Insulated Truck.

Before you buy an insulated or refrigerated truck, ask your body builder about Dry-Zero Insulation. Or write to Dry-Zero Corporation, giving the size of your truck body, the merchandise to be carried and the required temperature, and let a Dry-Zero engineer tell you how much insulation is required.

DRY-ZERO
REG. U.S. PAT. OFF.
THE MOST EFFICIENT
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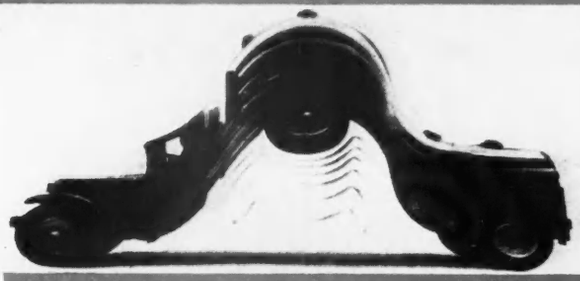
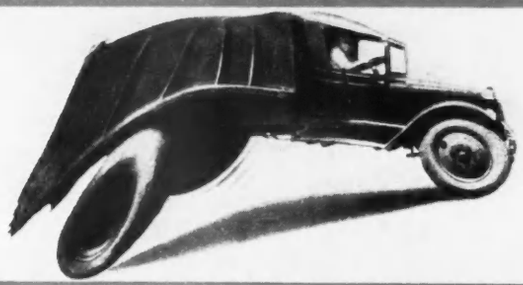
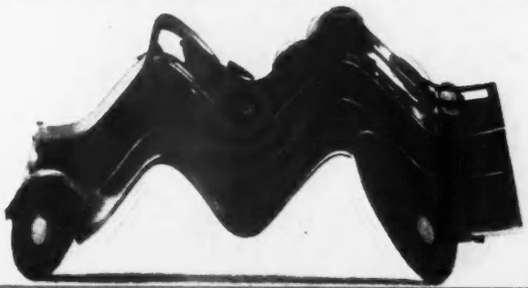
Grey-Rock BALANCED BRAKING ENDS



JACKKNIFING—It happens when the tractor wheels brake too fast for the rest of the train. Properly *Balanced* brakes are the only cure. Grey-Rock provides them.



SIDE-SLIPPING—This happens when brakes grab on one side. *Balancing* with Grey-Rock blocks prevents grabbing and gives smooth, even stops.



BUCKLING—This is the result of insufficient friction on the rear wheels. You can cure it by *Balancing* with the correct Grey-Rock blocks.

Grey-Rock
BRAKE BLOCKS

Grey-Rock
HiWaY BLOX

Only two types of Grey-Rock Blocks are required to service your entire fleet. They are Grey-Rock Brake Blocks with orange edges and Grey-Rock HiWaY Blox with black edges. These two different type blocks, when used as specified in the Grey-Rock Recommendation Guide, will give Balanced Brake Action to any commercial vehicle. The "Guide" was prepared after surveying 250,000 actual field operations and is the most complete, authoritative study ever made. See your Grey-Rock distributor's salesman.

UNITED STATES ASBESTOS DIVISION *of Raybestos-Manhattan, Inc.*, MANHEIM, PA.

BRAKE LININGS • CLUTCH FACINGS • FAN BELTS • HOSE • PACKINGS • RELINING EQUIPMENT

The Way to Good Roads

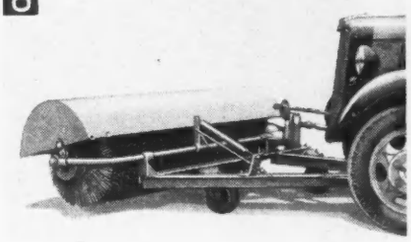
(CONTINUED FROM PAGE 39)

really in its element in the maintenance of secondary roads so vital to the farmer, small town and hundreds of small rural developments which depend on passable roads and motorized equipment for maintaining contact with the "market" and with one another.

The planer is a wide, short blade attached to a truck and dragged over dirt roads for the purpose of leveling off the high spots and smoothing the surface. Highway officials have long recognized that a truck equipped with a planer offers the most efficient and most economical method for maintaining dirt and gravel roads. The operation of this unit is very interesting. It is equipped with shock absorbers of one type or another designed to absorb road shock and vibration. From his seat the driver may apply pressure to either side of the blade, depending on where the road needs the most leveling. The blade may also be raised or lowered quickly by the driver. Pressure is developed with a small compressor carried on the truck and in most cases runs off the fan belt. An improvement in the planer is the ability of adjusting the blade so that it will not cut into soft spots, thereby ripping a hole in the surface.

THE road scraper is brother to the road planer and should be mentioned in the same breath. With either a flat or curved blade and curved moldboard, the scraper will do a splendid job of smoothing all kinds of dirt or gravel roads. Heavy hydraulic pressures may be used for cutting out corrugations, hard spots and ruts. Other types of scraper units are designed to do an elaborate job of road building as well as road maintenance. Such units cut, dig and load dirt, spread, level off and grade. A contractor may do an entire job with one machine and eliminate costly handling with a multiplicity of equipment.

8



8—Detroit Harvester street sweeper and snow brush includes rubber-tired casters and easier removal arrangement among its Improvements

A unit designed for the maintenance of secondary roads is the bituminous distributor, first cousin to the bituminous paver. The distributor is made in sizes from 400 to 2000 gal. capacity. It is equipped with oil burners and flues within its storage tank for the heating of bituminous material. This material is discharged through spray bars. Sprays from two to 20 ft. wide in any prescribed quantity per cu. yd. may be laid. The strong odor of bituminous material on a secondary road is evidence of the recent visit of this truck equipment practically indispensable in rural communities.

OVER the major highways and city streets one angle of the maintenance problem resolves itself down to the use of the sweeper and street flusher. The street sweeper makes a most efficient, practical and economical unit wherever there is a "man-sized" sweeping job to be done. It is simple in construction and light in weight and may be attached to any type of truck without altering the construction of the truck. Some types of units will clear a path 5½ ft. wide and sweep 25,000 sq. yd.

(TURN TO PAGE 102, PLEASE)

WHAT insurance company would be so reckless as to gamble with this lumberjack's life—at regular premium rates?

Yet every time you send a truck out on the road with breakable, non-flexible fuel lines you're gambling with that truck's life.

Keep your trucks right on schedule with Weatherhead Flexible Fuel Lines.

They are always the best bet.

THE WEATHERHEAD CO.
620-724 Frankfort Ave., Cleveland, O.

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. . . AND ROGERS USES AUTOMOTIVE DULUX

REG. U. S. PAT. OFF.

to make low-cost maintenance

A CERTAINTY!

DOWN IN DIXIE, a fleet of one hundred handsome trucks carries the famous Rogers name over four states.

And each truck gleams with a Du Pont Automotive DULUX finish—because Rogers Stores is *another* of the great number of fleet owners who know that DULUX saves money.

Fleet owners have found that a sparkling DULUX finish makes trucks into good-will advertisements for their business wherever they go. They have found that DULUX keeps good appearances *up* and refinishing costs *down*.

Here's how: Du Pont Automotive DULUX is extraordinarily durable. It keeps its rich gloss far longer. Its protective film is unusually elastic and adhesive to the surface . . . it is resistant to chipping, cracking and flaking, even on a crumpled fender. Its smooth, hard finish gives little foothold to dirt and makes washing and polishing easier. It stands up magnificently under the constant wear and tear of road travel, traffic stains and daily exposure to all kinds of weather. Its long-lasting qualities make trips to the refinishing shop few and far between.

Automotive DULUX can be applied in your own shop, either with brush or spray. Or, if you don't operate a refinishing shop yourself, an Authorized DUCO-DULUX Refinisher will do the job for you.

At your request a du Pont representative will call and give you full information about Du Pont Automotive DULUX. Write to E. I. du Pont de Nemours & Co., Inc., Finishes Division, Refinish Sales, Wilmington, Delaware.

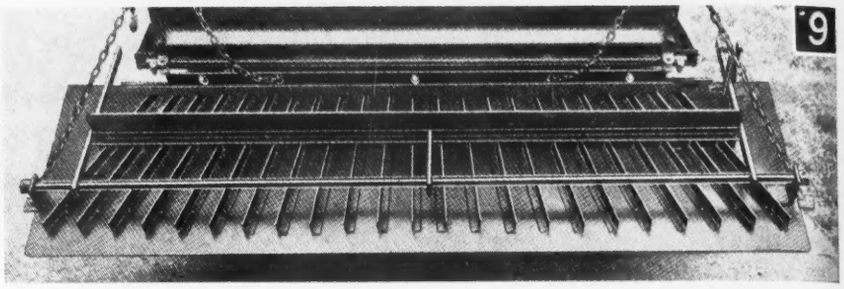
DU PONT
REG. U. S. PAT. OFF.

AUTOMOTIVE DULUX

REG. U. S. PAT. OFF.

DU PONT ON THE AIR—*Listen to "The Cavalcade of America" every Wednesday, 8 p. m., E. S. T., over Columbia Broadcasting System*

(CONTINUED FROM PAGE 100)
of surface in an hour's time with a truck traveling at about 8 m.p.h. The unit makes a clean sweep of the job! The fact is also interesting that the sweeper is frequently used for removal of light snowfalls, thus making a dual contribution to the maintenance of the highways. Sweepers have been improved with the installation of rubber-tired casters under the front-end of the sweeper so that the unit will follow the ground more closely and permit easier maneuverability. These casters also lessen the load on the truck's front axle.



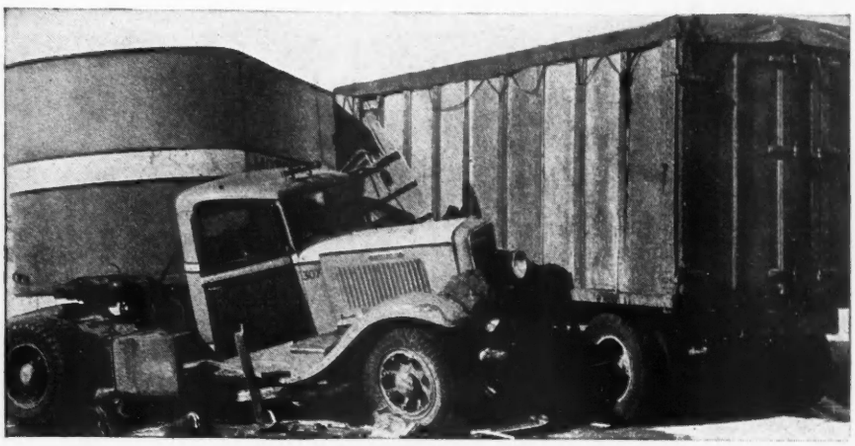
9—Hercules Steel Products fan spreader that may be attached to any dump body. A recent improvement is a gate which controls flow of material to a predetermined thickness. It is quickly and easily adjustable

Along with the family of the street sweeper resides its rich relation, the street flusher. It is made in sizes of 300 to 3000 gal. capacity with a pump capacity of 600 gal. per minute discharging water over the street at a governed 50-lb. pressure, on the average unit. The flusher may be equipped with sprinkler nozzles for wetting dirt and secondary roads. The flusher may be mounted on truck chassis or semi-trailers with either straight or drop frames. The idea of the fan-shaped stream under pressure has proven the most economical and efficient in cleaning of streets. A flusher, on the average, will clean a strip 16 ft. wide with one nozzle, 28 ft. wide with two nozzles and 42 ft. wide with three nozzles in one operation. Such units are effective on all kinds of hard surface, smooth, rough, vegetation-covered or dirt streets. Some improvements in street flushers are increased efficiency of pumps, better nozzle adjustment, lighter equipment and automatic indicators on the panel board. So versatile is the street flusher that it may be equipped for flushing, sprinkling, auxiliary fire fighting, dust laying road oils, sewer cleaning, tree spraying, pumping, etc.

NOT to be left out in the cold in any review of good road building and maintenance equipment is the snow plow, although to serve in the cold—and the colder the better—is the major purpose in life of this equipment. The snow plow, at least in the snow belt, has made a greater contribution to the maintenance of highways than perhaps any other equipment. It has also offered truck operators an unusual opportunity as snow plow operators.

The basis of this opportunity lies in the fact that the reported 10,757 truck plows in operation by various state highway departments (there are undoubtedly thousands of units in use unreported) make it impossible for the states to keep all major and secondary roads open after a heavy snowfall. As major routes must be kept clear or

(TURN TO PAGE 104, PLEASE)



This is TOUGH on Wheels and Axles

Where Fast, Accurate Bear Alinement Gauges Save Money

When a couple of tractor trailers come together something has to give. Wheel alinement angles are shot. Twisted axles and bent frames are common results. Economical repair calls for special equipment.

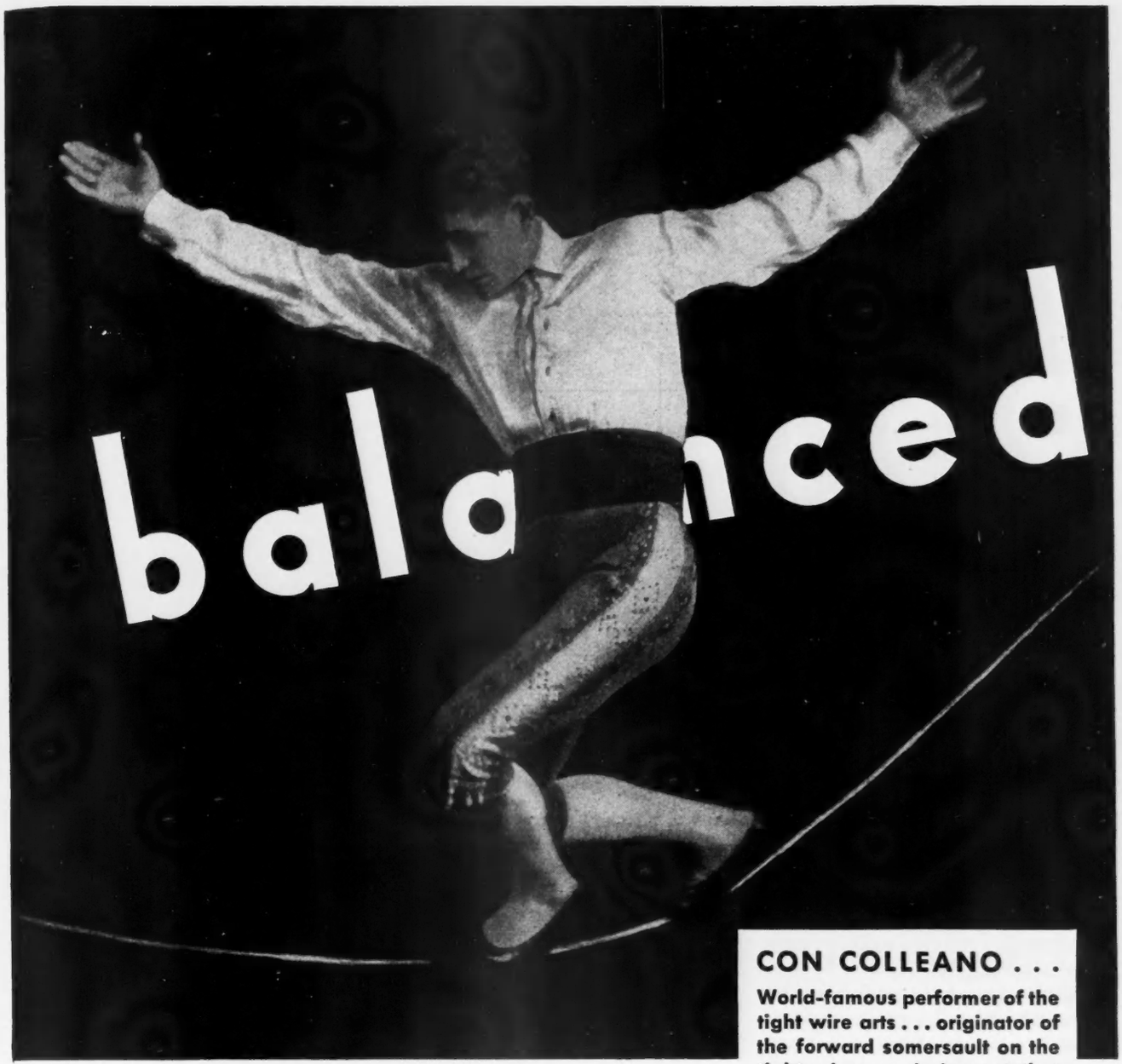
The big job is to put these vehicles back on the highway in roadworthy condition in the *fastest possible time.* Safety is jeopardized and tires are subjected to excessive wear unless *all* alinement angles are inspected and proper adjustments made.

Fleet operators find that Bear Alinement Gauges provide the fastest, most accurate method of wheel, axle and frame inspection. Not only after wrecks but as a periodical maintenance service on all vehicles.

Periodical Alinement Inspection Pays

Bear Alinement Service soon pays for itself in *longer* tire life, *greater* gas and oil mileage, *safer* driving and *lowered* service costs. Ask us for details on how Bear can help you. Bear Mfg. Co., Rock Island, Ill.

BEAR EQUIPMENT INCLUDES: WHEEL ALIGNERS » FRONT-END MACHINES » AXLE PRESSES » FRAME STRAIGHTENERS » WHEEL STRAIGHTENERS » ALINEMENT RACKS ALINEMENT GAUGES » WHEEL BALANCE STANDS AND LUGS » SPRING RE-ARCHERS » TIRE SPREADERS » CASTER SHIMS AND MANY OTHER ALINEMENT TOOLS



CON COLLEANO . . .
World-famous performer of the tight wire arts . . . originator of the forward somersault on the tight wire — a daring act that requires *perfect balance.*

● Packard FOUR-FORTY is *perfectly balanced,* with *all* the qualities required for better performance and longer life! For it offers a high degree of resistance, not only to heat, but to high voltage rupture, oil and age as well! That is why it withstands *every* type of punishment that bus, truck or fleet service can inflict upon it . . . and that is why it gives better performance and outlasts any ordinary ignition cable. By using Packard FOUR-FORTY you can eliminate one out of every three of the ignition cable replacements you are now making. Install Packard FOUR-FORTY on your equipment NOW—and enjoy the savings that it will bring you. Order from your jobber. Packard Electric Corp., Warren, Ohio.

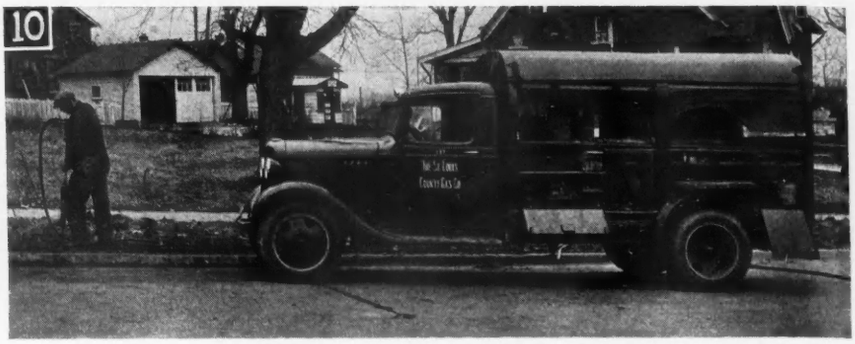
Packard
REG. U. S. PAT. OFF.
TRADE MARK

THE STANDARD WIRING EQUIPMENT OF THE AUTOMOTIVE INDUSTRY

(CONTINUED FROM PAGE 102)

cleared as quickly as possible, the secondary or rural routes often wait days before they can be opened. This condition means that snow fighting, to a certain extent is "everybody's business." The large truck operators, the large growers who must get their produce out to the market, milk companies and oil distributors form but a small part of our business life who are forced to get into and through these rural roads, and they realize that to do so plowing equipment is necessary.

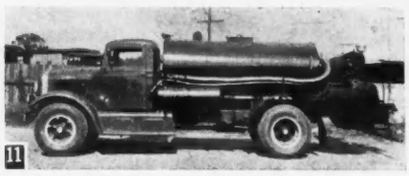
These industries and transportation



10—A Redi-Service truck with special body by Hercules Steel Products, equipped with special power-takeoff and Ingersoll-Rand compressor for handling many types of road jobs.

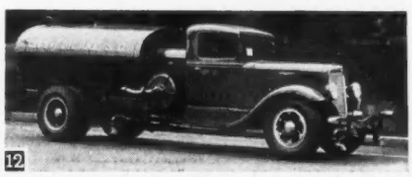
lines, small as well as large, are coming to the use of the snow plow as regular equipment, not only for their own purposes but also with the opportunity in mind of renting this equipment or their services to the community in which they operate.

SO vital has it become to keep open roads to permit the normal flow of traffic that in the last few years, the growth of snow removal operations has been marked by leaps and bounds as as well as the multiple use of snow



11—Municipal Supply bituminous distributor with a tachometer arrangement for accurate application of material on road, and with reverse suction attachment permitting nozzle shutoff without dripping

plows as the one sure way out of snow-choked highways. During the winter of 1933-34, when figures were available, 36 highway departments reported clearing 188,522 miles of highway at a cost of over $9,000,000. We might add to this several thousand miles of rural roads kept open for traffic by local authorities. These state and local authorities have done wonders in handling the situation. But truck operators, industrial concerns, farmers and others are



12—Manually operated elbows permit setting of nozzles to any desired angle in this Municipal Supply street flusher

joining in the task more and more because they have come to realize the importance of keeping their "life-line" open.

To aid them in this task, truck operators have a variety of snow removal

(TURN TO PAGE 106, PLEASE)

Checker Chooses ALGOMA PLYWOOD

TO obtain greater structural strength, with freedom from any tendency to warp or check, the Checker Cab Manufacturing Corporation specified ¾" plywood to replace 1" hardwood lumber in the dashboards of all their new taxicabs.

ALGOMA Plywood was chosen for this important construction because of: 1. Superiority in selected Northern Hardwoods; 2. Quality and uniformity in factory-cut veneers; 3. Dependability of resin-glue bonds, fused in the finest, most accurate, hot-plate plywood press equipment in existence.

ALGOMA Plywoods, including metal-faced varieties, meet many modern construction needs in the transportation industry.

Write us for suggestions, details and prices.

— TECHNICAL DIVISION —
ALGOMA PLYWOOD & VENEER COMPANY
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FACTORY, ALGOMA, WISCONSIN

The McCord System gives you

TRUCK REFRIGERATION AT NO COST

by the fuel that runs the motor

Refrigeration at no cost—nature's way—the McCord way. This truck now on a tour demonstrating this practical refrigeration-fuel system.

Convector installed upright in rear corner leaving maximum payload space

The McCord system gives you refrigeration at no cost along with better motor performance.

Check These McCord Advantages:

Refrigeration at No Cost—a by-product of the fuel which runs the motor.

No Operating Expenses—No compressors or other conventional refrigerating equipment.

Minimum Maintenance Expense—No moving parts in refrigerating system.

Perfect Temperature Distribution—A fan circulates the chilled air.

Superior Fuel—Extremely High Octane Rating—No Knocking. Easy starting—fuel is always a dry gas. No crankcase dilution. Cylinder wear reduced.

Low First Cost as compared to other mechanical systems. Simple installation.

Minimum Space—The compact tubular convector occupies less than one square foot of floor space.

Address all inquiries to

McCORD RADIATOR & MFG. CO., DETROIT

McCORD REFRIGERATION-FUEL SYSTEM FOR TRUCKS

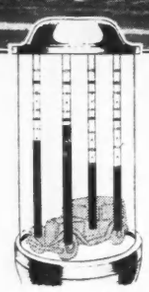
(CONTINUED FROM PAGE 104)

equipment from which to choose. The reversible blade type plow for attaching on trucks has found wide use among truckers. The reversible blade type plow in different models and sizes as put out by different manufacturers is perhaps the all-around snow plow for general use. This plow ranges in height from 22 in. to about 42 in. and in width from 8 ft. to 11 ft. for use on trucks ranging in capacity from 1½-ton to 5- to 7-ton. Another type of plow functions as a one-way plow, cutting into the snow, lifting it over the sloping moldboard and rolling it off to the side leaving a sloping bank with no overhanging edges to fall back onto the road. This type is primarily for use in snow of even depth where speedy snow removal is essential.

With the use of the V-type plow, we roll up our sleeves and tackle the job of snow removal seriously. This is a double-bladed plow shaped like a V and designed to clear a clean, wide path through the highway. The V plow with sides adjustable for width will clear a path for two-way traffic where there has been a medium-heavy snowfall. With this type of blade as many as four different angles for each blade are possible, depending on the depth of the snow. The heavy-duty type of V plow is built with an extra blade behind and extending beyond each side of the "front-line" V blade. Heavy-duty V-type plows are built in various sizes for heavy, extra heavy and tremendous snowfalls. Variations of these plows are obtained with different size and types of wing plows supplementing the "front-line" plow, used for cutting and clearing snow at the sides of roads and at various heights.

IMPROVEMENTS in types of snow plows may be listed as: Automatic safety blade trip, adjustable swivel casters, hydraulic plow lifts, universal axle clamps, underframe method of attachment and hinged side wings. Much has been found out and great improvements have been made in determining the most effective slope or pitch of the moldboards and the proper curvature and lateral pitch of the radius that rolls the snow aside.

One interesting application of modern means of communication to this modern snow fighting equipment practised by one manufacturer is the application of radio control to the operation of snow trucks for the purpose of notification of central bureaus of open or closed highways. This is perhaps the latest contribution to the most modern and major truck equipment used in maintaining good roads.



Four vertical tubes—as easy to read as a thermometer — show the braking effort on each wheel. No jiggling, confusing meters.

Tubes are calibrated in pounds so that the height of liquid in each tube shows the efficiency of the corresponding brake...Ideal for detecting faulty brakes, and also for checking work after adjustments have been made.

WEAVER

Automatic

BRAKE TESTER

Instantly Records True Condition of Each Brake . . . . In Single Stop

It pays Fleet Operators to make sure that brakes are in good condition. An accurate check can be made in a few seconds on a Weaver Automatic Brake Tester—faulty adjustments show up instantly and can be corrected before serious trouble occurs.

Tester lies flat on the floor, and can be installed anywhere in shop or garage so that cars may drive over from any angle. Two-way operation. Gauges are visible from driver's seat—and thermometer type gauge readings remain stationary until automatically released when car drives off.

This dynamic type Tester actually tests car in motion; Shows transfer of weight from rear to front wheels—and readings show both relative and total braking effort.

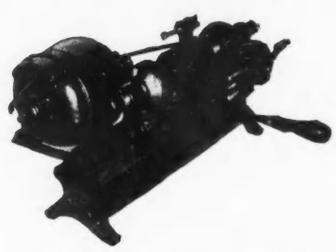
Available in surface and flush type. $465 and up. . . . Please ask for details.

WEAVER MANUFACTURING COMPANY

Chatham, Ontario, Canada — SPRINGFIELD, ILL., U.S.A. — London, England

Commutator Refinisher

THE Trucut commutator refinisher is designed for machining and undercutting automotive starter and generator commutators. With this machine, centering the ends of the armature shaft is unnecessary, as the head and tailstock centering chucks allow the armature to turn on its bearings exactly as when mounted in the starter or generator as the case may be. A 1/6 h.p. motor having a speed of 1725 r.p.m. drives



Trucut commutator refinisher

the armature through a belt around the core. The undercutter, which is driven by the same motor, travels laterally by means of a long hand lever. A vertical adjusting screw maintains a uniform depth of the cut. This machine is distributed by Frank N. Wood Co., 316 Caswell Blk., Milwaukee, Wis.

Fleet Owners *buy* more Toledo Valves

4 to 1

—convincing proof of quality and dependability

● There are sound reasons for these big gains in sales of Toledo truck and bus valves. Fleet owners want better performance, lower maintenance costs—and they find the answer in Toledo Super-Forged *Guaranteed* Valves. Try them in your toughest motor; Toledo welcomes that challenge. Your Toledo jobber carries a complete stock for your convenience and service.

★

GUARANTEE

Toledo "Type S" Super-Forged Valves are guaranteed. Your Jobber will give you, without charge of any kind, a new valve in exchange for any Toledo "Type S" Super-Forged Valve which proves defective in service.

THE TOLEDO STEEL PRODUCTS COMPANY, TOLEDO, OHIO, U. S. A.

New York, 17 W. 60th Street » Chicago, 1225 South Wabash Avenue » Detroit, 443 East Fort Street » Atlanta, 279 Ivy Street, N. E. » Dallas, 2805 Commerce Street Kansas City, 14th and Oak Streets » Los Angeles, 1341 South Hope Street San Francisco, 528 Larkin St. » Portland, 408 N. W. 12th Avenue » In Canada: The Toledo Steel Products Company, Ltd., 14 Breadalbane Street, Toronto

TOLEDO

New Products on Parade

(CONTINUED FROM PAGE 96)

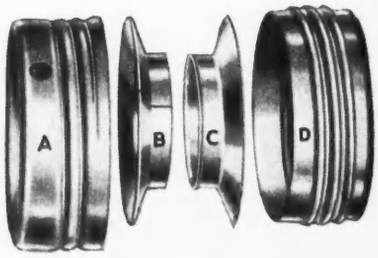
Portable Charging Outfit

SIMPLICITY and portability are said to be the two outstanding features of the new Delco plant for charging batteries. A single-cylinder, air-cooled engine is directly connected to a six-pole, 150-watt generator of either six or 12-volt design. The engine is of the four-cycle, "L"-head type. The weight of the entire unit is 44 lb.

The Delco plant, according to United Motors Service, Inc., Detroit, is particularly designed for charging radio and automobile batteries and for use on boats, trucks, wrecking cars, etc.

Universal Muffler

THE OK universal muffler is said to fit the majority of cars and trucks, and due to its construction will give a gas-tight connection throughout its life. The illustration shows the three connecting parts. Cap "A" and the two disks "B" and "C" are drawn over the end of the exhaust pipe, which is then inserted in the end of the muffler "D". As cap "A" is tightened the pressure against the outer flanges of the two disks forces them together so that "B" slips under the flanged edge of "C", forming a tight grip on the pipe.

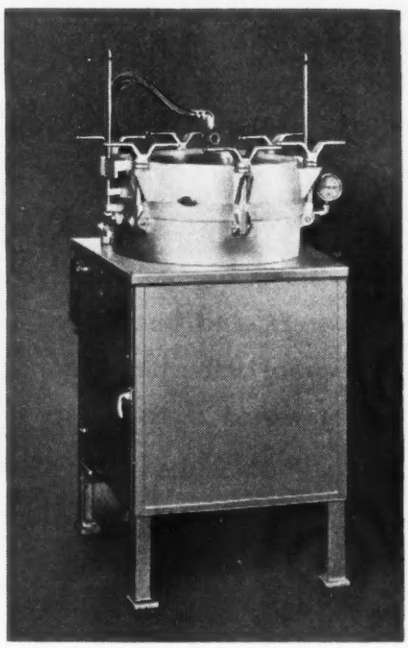


Showing assembly of Universal muffler

When assembled, the disks act as lock washers and prevent the cap from working loose.—Arnold Haviland Co., Defiance, Ohio.

Hilco Oil Reclaimer

FOUR new and improved models of the Hilco Oil Reclaimer have been recently placed in prdouction by The Hilliard Corporation of Elmira, N. Y. With this equipment the oil passes from the dirty oil



Hilco oil reclaimer

tank through the machine and is automatically pumped into the clean oil dispensing drum. An adjustable thermostatic control for oil temperature has been added, insuring correct temperatures at all times. The smallest outfit has a capacity of 12 gallons per day, and the largest a capacity of 50 gallons per day. As a safety factor a new type overload switch is provided.

Ammco Brake Hone

THE new Ammco brake cylinder hone is designed to take care of hydraulic brake cylinders under 1 in. in diameter, as the tool has a range from ¾ in. to 2 in. Operated by a small electric drill, it uses either abrasive stones for grinding or felt pads

(TURN TO PAGE 110, PLEASE)

TRUXMORE
WORLD'S BEST 3RD AXLE

$20,000 Savings Per Year
IN YOUR FLEET OF 20 TRUCKS

Truxmore 3rd Axles often save $1,000 per year per truck, compared to trailers, hauling 7-ton loads or more.

We Make Both 3rd Axles and Trailers

Write for "What Users of Both Say." . . . Address Dept. A

New York
Syracuse, N. Y.
Binghamton, N. Y.
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Erie, Pa.

1791 FILLMORE AVE.
TRUCK EQUIPMENT CO. INC.
BUFFALO, N.Y.

Chicago, Ill.
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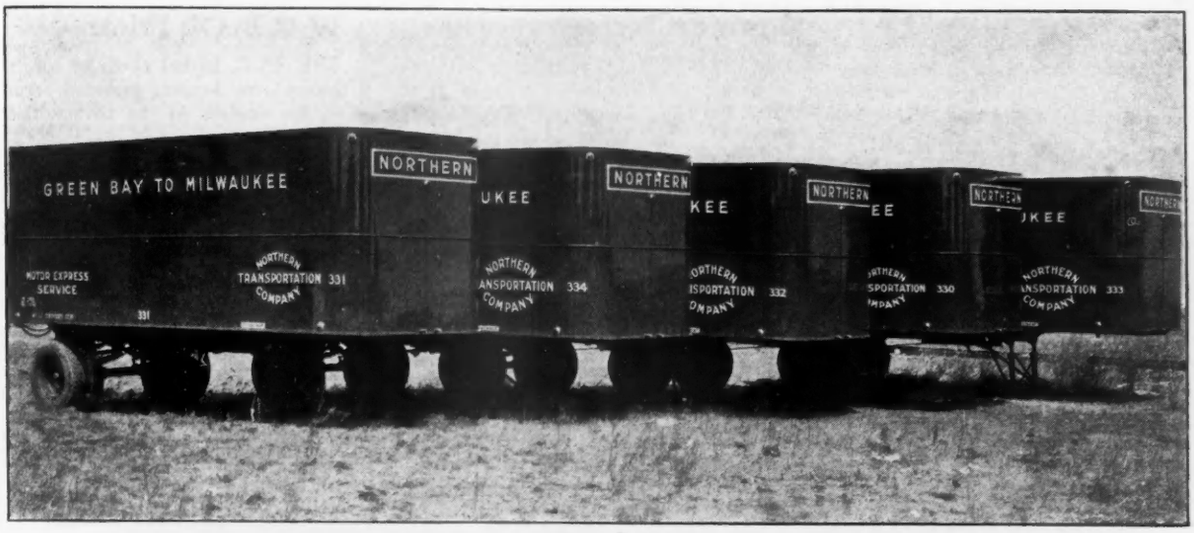
Pittsburgh, Pa.
Boston, Mass.



MORE PAY LOAD

WITH

PLYMETL & PHEMALOID

WITH transportation moving at faster and faster clips, and heavier tonnage traveling at greater speeds, light weight, durable, strong commercial bodies are needed . . . the answer to this need is Plymetl . . . the lightest and strongest material yet developed.

The trailers, illustrated above, built by Fruehauf for the Northern Transportation Company will stand the gaff of rough roads and heavy loads . . . the body itself is light weight but strong, assuring more pay tonnage per trailer.

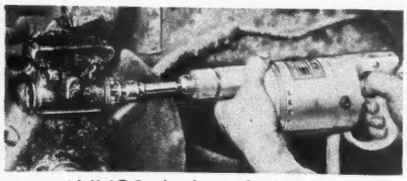
Specify Phemaloid and Plymetl in your next job and remember . . . the experience of Haskelite is unmatched in the development and manufacture of composite panels.

THE LIGHTEST AND STRONGEST MATERIALS FOR PANELS AND FLOORS

HASKELITE MANUFACTURING CORPORATION

208 West Washington Street, Chicago, Illinois

(CONTINUED FROM PAGE 108)
with lapping compound. Work can be done without removing the brake cylinder from the chassis, and it is claimed that the tool will remove all corrosion and roughness,



AMMCO brake cylinder hone

restoring the original mirror surface.—Automotive Maintenance Machinery Co., 2104 Commonwealth Ave., N., Chicago.

Ignition Tester

FOSBERG MFG. CO., Bridgeport, Conn., is marketing a line of spark-testing screw-drivers. There is secured in the handle a neon tube, visible through a milled slot, and when the tip of the screw-driver is placed on a firing spark plug, this tube

Ignition tester has neon tube

flashes an orange light. This screw-driver is made in three styles. The neon tube is easily replaceable in case of damage.

OSHKOSH

4 WHEEL DRIVE

- Power is applied to all four wheels.
- Automatic locking differential between axles.
- Easy steering—comfortable driving.
- Simple design—economical upkeep.
- A proven product backed by a record of 100% dependability and low operating cost.

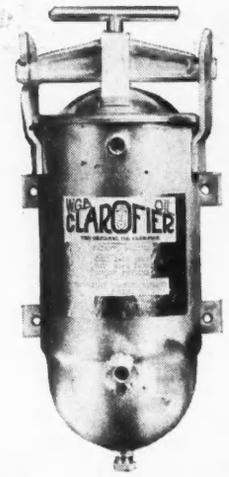
Write for complete information.

OSHKOSH MOTOR TRUCK, Inc.

Oshkosh, Wisconsin

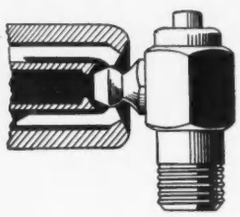
W. G. B. Oil Filter

THE W. G. B. Oil Clarofier consists of a pressed-steel housing mounted permanently on the engine. At the bottom there is a sludge sump. Immediately above this sump is a flat plate supporting the filtering element. In operation the oil is fed to a lower connection and passes through a hole which takes a right-angle turn on the inner side of the filter causing a circular flow of oil which throws out any water or heavy particles. After the oil has risen in the filter bag it passes through a perforated cup and out through an upper connection.—W. G. B. Oil Clarifier, Inc., Kingston, N. Y.



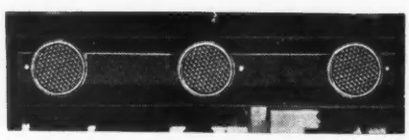
Alemite Fitting

POSITIVE protection against over-lubrication is said to be provided by the new Alemite "shut-off" fitting. There is a plunger inside this fitting, and as soon as the correct amount of lubricant has been pumped into the bearing, the reverse pressure forces the plunger up, indicating to the mechanic that no further lubrication is needed. According to the Alemite Division of Stewart-Warner Corp., Chicago, this fitting is intended for use on water pumps, making it safe to use high-pressure lubrication without getting excess grease in the cooling system.



AC Safety Signals

AC super reflex signals for buses, trucks and trailers are visible from 50 to 1000 ft. and are claimed to be water-proof and shatter-proof. Silver plating, under copper



AC safety signals visible up to 1000 ft.

and sprayed aluminum, is said to give brilliance and long life. The space between the back of the lens and the case is filled with an asphalt binder into which the lens is pressed, and which securely cements the reflector in place. The 4-in. lens is furnished in either red or green.—AC Spark Plug Co., Flint, Mich.

(TURN TO PAGE 112, PLEASE)

PROTECT YOUR LABOR COST

Labor is a major item of fleet maintenance. The labor cost of replacing a damaged part is usually much higher than the cost of the part itself.

It takes just as much time and work to install an inferior bearing as it does to install a genuine Timken Bearing.

The small amount you may save by buying inferior parts is not worth the risks you take.

Every genuine Timken Bearing sold for replacement is manufactured in the same plant, on the same automatic machines, from the same material (Timken Alloy Steel) and to the same precision standards as the Timken Bearings originally installed by the truck manufacturer.

This means that when you replace one genuine Timken Bearing with another you restore Timken dependability and endurance in full. Your labor cost is protected against the possibility of another early replacement.

Furthermore, you assure the factor of safety—another important consideration in these days of heavy loads and high speeds.

Every genuine Timken Bearing has the name "TIMKEN" stamped on the cup and cone. Look for it.

THE TIMKEN ROLLER BEARING SERVICE & SALES CO., CANTON, OHIO

TIMKEN *TAPERED ROLLER* **BEARINGS**

(CONTINUED FROM PAGE 110)

Tru-Stop Emergency Brake

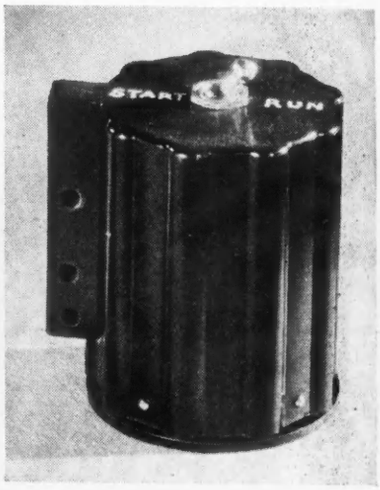
A TRU-STOP ventilated disk emergency brake especially designed for Chevrolet and Ford trucks and buses has been announced by American Cable Co., Inc., Bridgeport, Conn. The self-cooling ventilated disk which revolves with the driveshaft is enclosed in a special mounting. When the brake is operated, the brake lining which is mounted on flat shoes is applied by powerful leverage to both sides of the disk. The Tru-Stop brake fits into the chassis without disturbing any other unit, and it does not in any way affect the operation of the standard emergency brake with which the truck is equipped. Three sizes are provided: 10½, 11 and 12 in.

Alco Lubricator

The Alco automatic lubricator is designed to provide just the proper amount of oil to the steering spindles, spring shackle bolts, clutch yokes, etc., without attention except for refilling every 10,000 miles. S.A.E. 90 E.P. lubricant is recommended for use with this device. This lubricator contains a weighted plunger which forces the lubricant past a check valve into a high-pressure chamber from which it is metered by an adjustable metering screw at the rate of one to five drops every 100 miles the vehicle travels.—Automatic Lubricator Co., 53 W. Jackson Blvd., Chicago, Ill.

Sparkflo Aids Starting

SPARKFLO is a new automotive device developed to start slugglish motors quickly in cold weather. The unit, in a Bakelite case, can be mounted on the steering column or instrument board, and sends an

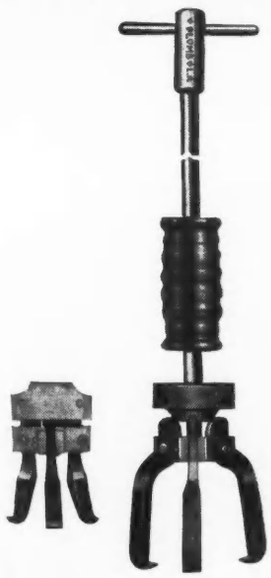


Sparkflo starts sluggish motors

extra shower of sparks into the combustion chamber of the motor. After the motor is started the toggle switch on top of the case is thrown from the "start" to the "run" position. Sparkflo is a product of Guaranteed Parts Co., Inc., 250 West 54th St., New York City.

Plomb Universal Puller

THE Plomb universal puller is said to be a new application of the slide hammer principle to a puller for gears, bearings,



Plomb puller for gears, bearings, etc.

bearing races, inside bearing cups, valves, etc. The jaws are hooked in place, either inside or outside, and the adjusting nut

(TURN TO PAGE 114, PLEASE)

Tossed up on the crest of every popular demand are always a lot of "also the best" products . . . but reliance may always be placed in the claims of those who have pioneered in a field and who have general standard equipment acceptance. Mechanical perfection in the automobile industry has been a matter of evolution and the products that may be trusted to perform consistently with their efficiency have grown up with it.

MONARCH GOVERNOR CO.
1832 Bethune Ave., W. DETROIT

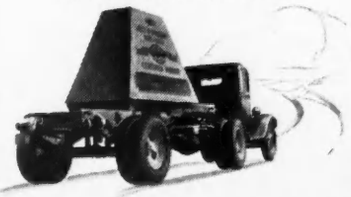
MONARCH SINCE 1913 GOVERNORS

CHEVROLET

FOR ECONOMICAL TRANSPORTATION

Fleet owner tells why
CHEVROLET TRUCKS
are preferred over all other makes

Coast-to-coast test run shows remarkable economy of Chevrolet trucks

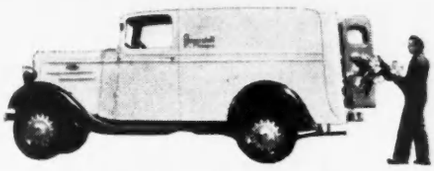


Location of Test	Los Angeles to New York
Distance Traveled	3511.5 miles
Running Time	129 hours, 24 minutes
Average Speed	27.14 miles per hour
Gasoline Used	308.6 gallons
Gasoline, miles per gallon	11.378
Oil Consumption	2 quarts
Cost of Fuel	$57.59
Cost of Oil	$.67
Fuel and Oil (cost per mile)	$.016
Average cost per ton mile	$.00328
Water Consumption	1 gallon

No mechanical failures

Entire test conducted under supervision of A.A.A. Contest Board—Sanction No. 3300.

Half-Ton Canopy Express—112-inch wheelbase

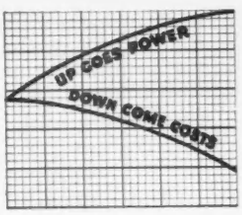


Half-Ton Panel—112-inch wheelbase

1½-Ton Open Express—131-inch wheelbase

1½-Ton Canopy—131-inch wheelbase

1½-Ton Truck—for trailer operation



When a fleet of trucks averages over 8800 miles per day of heavy-duty haulage, the equipment must be *dependable*—and economical. That is why 40 of the 42 trucks owned by the J. W. Conner and Sons Construction Co., Tampa, Fla., are Chevrolet trucks. Read this company's own statement, made by J. W. Conner, Jr., telling why they prefer Chevrolet over all other trucks:

"We are operating 42 units, all of which are Chevrolets, with the exception of two. All are equipped with 1½-yard hydraulic bodies, hauling an average of 2¼ yards of dirt per trip. On the present job the trip average is six miles and we make 35 trips per day.

"We have, since 1927, operated practically all makes of trucks in our business, and our preference for Chevrolet is shown by the fact that we are 98 per cent Chevrolet equipped.

"By experience, Chevrolet trucks operate not only a great deal more economically but a great deal more consistently. We average better than 12 miles per gallon of gasoline. Oil consumption is confined to weekly draining.

"These are a few of the reasons why we recently added ten more Chevrolet trucks to our equipment."

Profit by this experience. Place one or more Chevrolet units in your fleet. Get the money-saving facts about Chevrolet trucks on your haulage or delivery work. Your Chevrolet dealer will co-operate in every way possible.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

GENERAL MOTORS INSTALLMENT PLAN—MONTHLY PAYMENTS TO SUIT YOUR PURSE

Let your Chevrolet dealer prove the ability and economy of Chevrolet trucks on your haulage or delivery jobs . . .

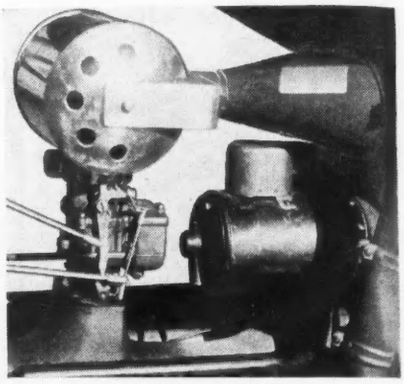
(CONTINUED FROM PAGE 112)
is run down until it locks, after which a few blows of the 2½-lb. hammer are said to be sufficient to loosen the part. The outside pulling range is from zero to 3 in., while the inside range is from 1¼ to 2¾ in. Plomb Tool Co., 2209 Santa Fe Ave., Los Angeles.

Windshield Defroster

THE B & B defroster can be mounted in any position on the windshield by means of a large vacuum cup on the back. A small vacuum motor fan blows warm air across the windshield, melting snow and ice on the outside and removing any steam from the inside. A toggle switch controls the heating element and a pilot light indicates when the heat is turned on. The fan has a two-speed control, the fast position being used for country driving or extreme conditions. A control box, mounted on the dash, contains the electrical and vacuum connections, so that the defroster can be removed and stored when not in use. It sells for $6.75.—The Bishop & Babcock Mfg. Co., 4901 Hamilton Ave., Cleveland, Ohio.

Typhoon Super-Charger

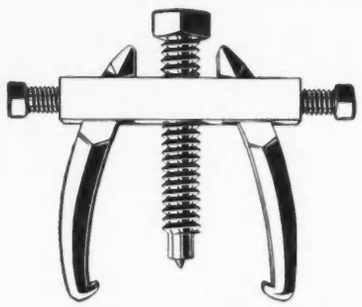
THE Typhoon Manufacturing Co. of Baltimore, Md., has developed a "super-charger" for installation on Ford V-8 engines which sells for $12.50. This device takes the place of the standard air cleaner and directs the blast of air from the fan into the carburetor inlet. There are no moving parts. The model B "super-charger" is supplied complete with special carburetor jets and a carburetor wrench. The directed air flow together with the special jets is said to give improved performance and economy.



Typhoon supercharger for Fords

Junior Puller

THE National Junior puller has an improved design which permits reversing the fingers, making it possible to pull gears or bearings from either the inside or outside. A feature of this puller is the provision for locking the fingers when in place to secure a positive grip on the work. This tool will handle gears with an outside diameter up to 3 in. Made of drop-forged, heat-treated stock, it retails for $1.50.—National Machine & Tool Co., Jackson, Mich.



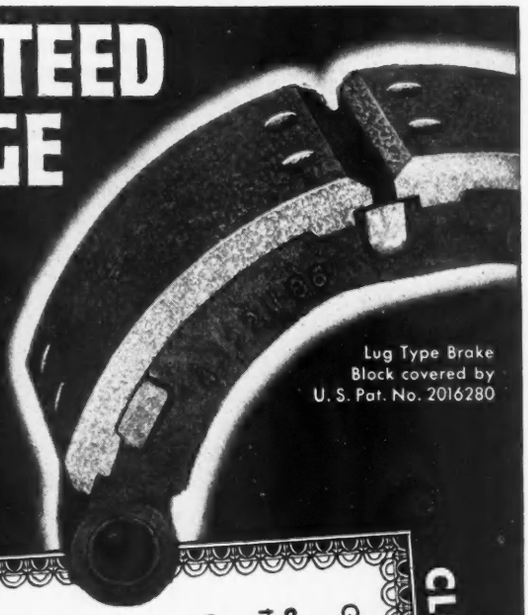
Junior puller permits reversing fingers

Gasket Compound

A NEW product called "Seal-Aide" has been developed by the Victor Mfg. & Gasket Co., Chicago. This gasket compound is said to be particularly adapted to steel-faced, all-metal and heavily reinforced cylinder-head gaskets. This material will not mix with water, oil or gasoline, and does not lose its sealing qualities under the heat of the motor, according to the company. It is sold in cans and may be obtained in three sizes.

(TURN TO PAGE 116, PLEASE)

GUARANTEED MILEAGE With Gatke HI-POWER BRAKE BLOCKS



Lug Type Brake Block covered by U. S. Pat. No. 2016280

GREATER BRAKING POWER

MORE MILES PER DOLLAR

REDUCED DRUM WEAR

GREATER SAFETY

CLIP THIS MONEY-SAVING COUPON

GATKE CORPORATION, 228-A N. La Salle St., Chicago, Ill.

Send full information about the revolutionary **Guaranteed Mileage Basis** on which Gatke HI-POWER Brake Blocks are sold and the Extra Braking Power they afford.

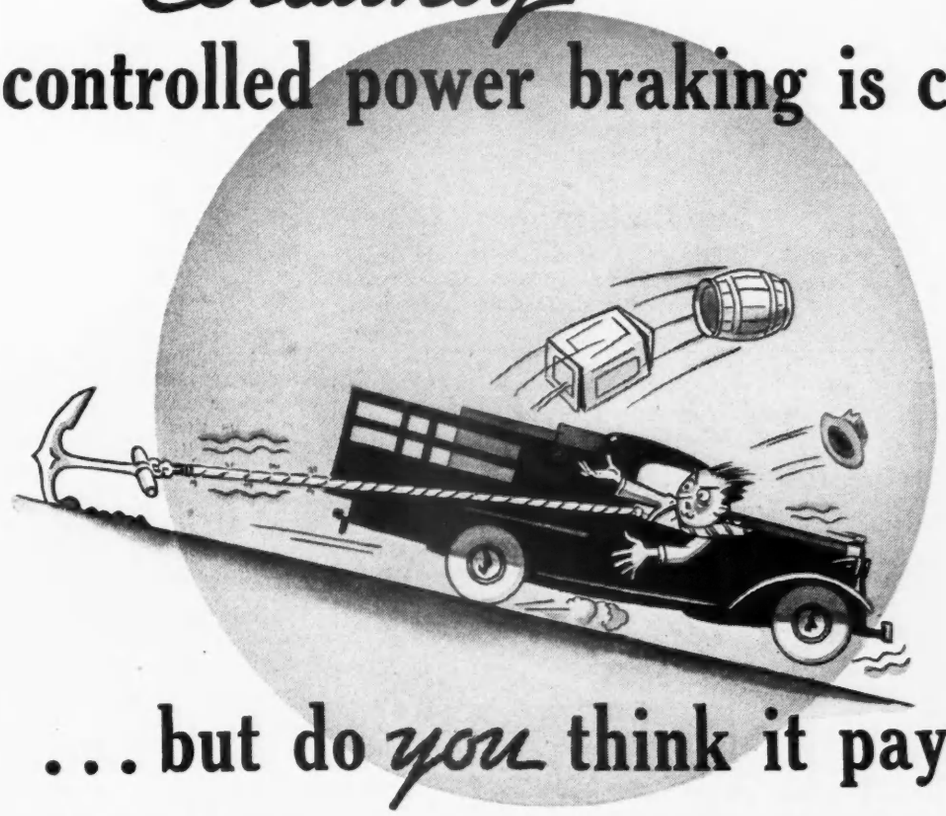
☐ Send quotation covering Gatke HI-POWER Brake Blocks on **Guaranteed Mileage Basis** for the following equipment—

Name of Truck or Bus _____ Model and Year _____ B.L.M.A. Number _____

Name _____ Company _____

Address _____

Certainly un-controlled power braking is cheaper!



. . . but do *you* think it pays?

TODAY'S higher speeds and thicker traffic demand more and prompter stops. The sensible answer is, ***help the driver's muscle*** with Power Braking — BUT ***control*** it against too-violent stopping!

Bendix alone offers this control—known as "Reactionary Cushioning"—which maintains "pedal-feel", lets the driver know ***exactly*** how much braking he is exerting. Bendix provides this, plus every other known Power Brake advantage.

Bendix alone possesses the background of a decade of experience with Bendix B-K Power Braking, on well over a million vehicles. Bendix engineers have pioneered every important development in braking.

Bendix alone maintains nation-wide service to insure uninterrupted and satisfying performance of Bendix B-K equipped vehicles.

BK VACUUM POWER BRAKING A BENDIX PRODUCT

To build Power Braking as well as Bendix B-K is built, naturally costs considerably more. Materials are better. Dimensions are more generous. Tolerances are closer. Assembly is more painstaking. Inspections are more exacting. Installations are more carefully worked out. Yet Bendix B-K Controlled Vacuum Power Braking costs but little more than the cheapest substitute.

Can you afford to risk the damage or loss of a valuable truck and its load for the sake of so slight a difference in price? Put your Power Braking situation up to Bendix. Quite likely the long experience of Bendix in the Power Braking field will provide a way to actually save you more than the little extra you pay for Bendix B-K security.

BENDIX PRODUCTS CORPORATION
(*Subsidiary of Bendix Aviation Corporation*)
401 Bendix Drive, South Bend, Indiana

96% of all power brake installations are BENDIX

BENDIX

CONTROLLED VACUUM

POWER BRAKING

(CONTINUED FROM PAGE 114)

Cleaner and/or Heater

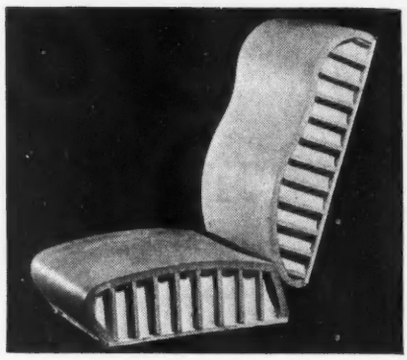
THE Premier electric vacuum cleaner, which is of a size suitable for cleaning the interior and seats of a truck, is so constructed that the suction guard can be removed and a nozzle attached in its place, and in place of the dust bag a heating unit can be installed. After these changes have been made the vacuum cleaner is converted into an electric blower that will supply a blast of hot air to thaw out a frozen radiator or water hose. This outfit is a product of the Electric Vacuum Cleaner Co., Inc.

Clearance Light Mounting

A NEW type of flexible bracket for clearance lights has been announced by the S & M Lamp Co., Los Angeles. It is of all-metal construction with two steel coil springs to provide adequate flexibility. S & M clearance lights are now equipped with a lens of new design, built with flutes around the circumference and dimples around the apex.

Seat Cushion

MISHAWAKA seat cushions are made from liquid latex, molded to the exact size and shape desired. They are made up of



Mishawaka liquid latex cushions

intercommunicating rubber cells said to give them a shock-absorbing action, and since these cushions are porous the flow of air keeps them cool. Developed by the Mishawaka Rubber & Woolen Mfg. Co., Mishawaka, Ind., these cushions have been tried out in the trucking and automotive field.

Sunnen Valve Lifter

SUNNEN Products Co., St. Louis, Mo., has announced a new valve lifter for Ford V-8 motors. Made of extra heavy square tubing, it is guaranteed not to bend even when prying out the most stubborn valve

Valve lifter for Fords

assembly. One end has a large notch for raising the spring, while the other end with the small notch is used to hook through the spring coil to apply force to a stuck guide.

Diesel Glow Plug

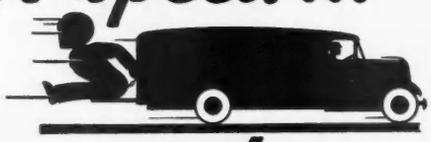
TO aid in cold starting of Diesel engines, The Edison-Splitdorf Corp. of West Orange, N. J., has developed a glow plug which screws into the combustion chamber and supplies heat to fire the mixture. These plugs, which are of the double elec-

Diesel glow plug aids starting

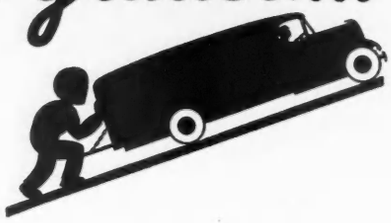
trode type are wired in series to a 24-volt battery with a resistance indicator and switch in the circuit. Current is allowed to flow for 15 to 30 seconds before starting, and this heats the coils of the plugs to approximately 2000 deg. Fahr. The Edison plugs are mica insulated and are so constructed that if the resistance coils burn out they can be replaced.

(TURN TO PAGE 128, PLEASE)

5.27 TO 1 *for speed...*



7.06 TO 1 *for grades...*



and

10 TO 1 IT'S BETTER

because it is Timken!

Do you want ample leverage for grades? Use the 7.06 ratio.

Do you want to make fast time on level highways? Use the 5.27 ratio.

One easy motion of a hand lever makes the shift.

The real vital fact is that now you can have a 1½-ton double-reduction, two-speed axle built by Timken; and all the satisfying assurance of ruggedness and low operating cost and minimum maintenance that the name Timken guarantees.

THE TIMKEN-DETROIT AXLE COMPANY

DETROIT, MICHIGAN

INTERCHANGEABLE WITH 1½-TON TIMKEN BEVEL DRIVE

2-SPEED DOUBLE REDUCTION AXLES

MODERNIZE

● *One of a fleet of 7 Model "87Q" Hugs equipped with a 7-yard barrel type body of special Hug construction, built for the Georgia Limerock Co., Perry, Ga.*

WITH HUGS

● 1936 is a year for modernization—in methods and in equipment. Start your modernization program with your transportation equipment by putting Hugs on the job. Moving dirt or rock products with Hugs gives you greater mobility and flexibility — at lower cost per yard. You'll see the results in faster hauling of bigger pay loads and at less expense per mile.

Fast, low-cost moving of dirt, quarry and rock products on tough jobs calls for equipment specially built to meet the conditions. Ordinary dump trucks just won't do. You must have trucks with real guts—trucks that will come through every time, no matter how tough the conditions, and then race back for more.

Hugs have everything! They are especially built to meet and withstand the toughest conditions; they have the ruggedness needed for rock and dirt moving operations. Hugs stay on the job year after year!

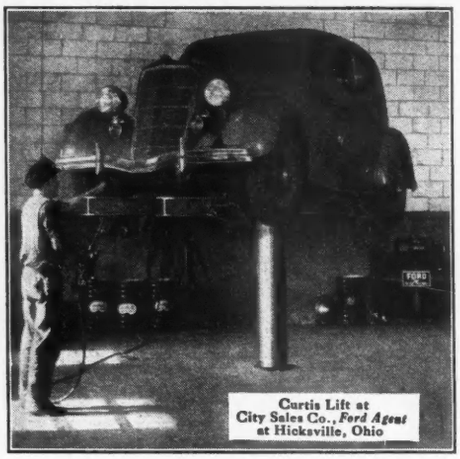
Tell us about your transportation needs. Let our engineers study your individual requirements and recommend specially designed and built Hug equipment.

Dump truck operators: No matter what your operation may be, whether moving rock products, dirt moving or batch hauling, investigate the Hug Roadbuilders for low cost transportation. ***Desirable territory open to responsible distributors.***

HUG

THE HUG COMPANY
570 Cypress Street • Highland, Illinois

BUILT TO MEET A CONDITION



Curtis Lift at City Sales Co., *Ford Agent* at Hicksville, Ohio

Every Lubrication Point Easily Reached with

CURTIS LIFTS

Curtis lifts are designed for ***complete accessibility*** of all lubrication fittings. Clutch housing, transmission, crankcase drain, steering gear, brake rods, tie-rods and the whole front end suspension are readily reached without interference.

Maximum Accessibility for faster, more efficient servicing.

Handle All Cars, regardless of make or model, with equal convenience.

Self-Leveling Platform prevents binding, even with sloping floor or unequal weight distribution.

Drop-Away Wheel Guides automatically spot car on the lift.

Absolute Safety—structurally safe for loads up to *four tons* plus oil-lock feature and controlled lowering speed.

CURTIS HYDRAULIC CAR WASHER—Silent, 3-cylinder, fully enclosed pump. Four-bearing crankshaft. Self-oiling. Silent "V"-belt drive. Powerful, fast-cleaning water stream.

CURTIS PNEUMATIC MACHINERY CO.
1970 Kienlen Avenue, St. Louis, Mo.
New York — Chicago — San Francisco

CURTIS

Cold Facts On Controlling Temperatures

(CONTINUED FROM PAGE 25)

thickness of 1, 1½ or 2 in., and is available in special dimensions. Flanges are provided for easy application. Its conductivity is .25 B.t.u.

Ferro-Therm, made by American Flange & Mfg. Co., is a comparatively new insulating material consisting of commercial black steel coated with a non-corrosive alloy. It comes in thin ribbed sheets, the number of sheets used depending upon the results desired. Its conductivity is .226 B.t.u. at 72 deg. mean temperature.

To further assist fleet operators in their appreciation of and approach to the important item of insulating materials, there follow recommendations covering thicknesses best suited for desired body temperatures:

Dry-Zero: 45°—2in.; 35°—2½ in.; 10°—4 in.; 0° or less—5 in.

Armstrong Corkboard: 20° to 40°—4 in.; 0° to 20°—6 in.

Haircraft: 55-60°—1 ply; 45-50°—2 ply; 35-45°—3 ply; 15-30°—4 ply; 0° to 15°—5 ply; —10° to 0°—6 ply.

Balsa Wood: 45° up—2 in.; 35-45°—3 in.; 20-35°—4 in.; 5-20°—5 in.; —5° to 5°—6 in.; —20° to —5°—6 in.

Refrigerating Systems

THE effort that is being made to provide highway transportation with efficient and economical refrigeration is nowhere better revealed than in the remarkable strides that have been made in improving refrigerating systems.

There was a time when the mechanical systems were so weight-consuming and fickle that many fleet operators seriously wondered if they would get anywhere in the truck field. The variety of systems available and the improvements made in them leave no doubt that mechanical systems have a very good future in the truck field.

Originally mechanical systems supplied truck refrigeration by means of gasoline engine-driven compressors. Their operation had to be controlled manually, and air circulation was by gravity. Today compressors driven by electric motors are in wide use and offer decided advantages. Completely automatic in operation, they supply current to both the compressor and blower type coil, which has a motor-driven fan assembly, assuring positive and more rapid circulation of cold air. There are two types of electrical power systems. One type drives the generator from a transmission power take-off, and the other has a special generator installed under the hood that is driven by a V-type cog belt from the engine. Both types regulate the speed of the compressor by thermostat control while the truck is in operation, and both have provisions for continuing the refrigeration direct from power lines while the truck is garaged. These electrical power systems may, of course, be used in connection with any standard, truck-type condensing unit.

The Whitaker-Upp electrical power system consists primarily of a specially designed power generator, voltage internally controlled, mounted under the hood and driven from the engine, supplies DC power to a dual DC-AC motor during road operation. When garaged, a switch-over may be made from the houseline circuit to the AC end of the motor. Both operations are automatic from thermostat control, and regardless of time, stops or distance maintain a predetermined temperature.

The Century Whitaker-Upp system is driven by a transmission power-takeoff and also has the dual DC-AC motor. Control is by thermostat. The change-over to AC is made instantly by manual switch.

The L.A.Dynamatic Drive consists of a magnetic clutch attached to a standard AC motor of any desired size. A

take-off on the transmission powers the drive while the truck is running and operates the refrigerator compressor. The AC motor operates the compressor while the truck is in the garage or loading depot. Up to a vehicle-operating speed of 25 m.p.h. (any speed can be fixed) the drive delivers engine speed to the compressor, the speed varying with that of the engine. But, at speeds above 25 m.p.h. the drive automatically regulates so as to deliver a controlled speed not injurious to the compressor. An arrangement has been worked out for trailers whereby the power is taken from the rear axle of the trailer.

Combinations of these power systems and compressor units may be used in refrigerating systems that are mechanically operated. As has been mentioned, there is the system that utilizes cooling coils with blower fan. There is also the system that uses evaporators.

THEN there is the Kold-Hold system, which is really a storage system of refrigeration, but which, if conditions warrant, may be combined with a mechanical unit. The Kold-Hold system consists of cooling units that may be mounted horizontally (suspended from the ceiling) or vertically. They may be used with any standard condensing unit either mounted on the truck or permanently installed in the garage. In addition, they may be operated by means of a central plant ammonia system. Each unit consists of a metal container in which an evaporator coil is submerged in a solution which has a predetermined freezing and melting point. These units are charged, or frozen, at night while the truck is idle. The solution freezes to a flint-like hardness and stores sufficient refrigeration to maintain the desired temperature from 15 to 24 hours without further servicing. When the compressor is mounted on the truck the touring range is practically unlimited, since the system may be conveniently plugged in to any ordinary power circuit.

There is a circulating brine system, developed by Fruehauf for use in its insulated vans. It does not purport to compete with automatic mechanical units, since, to provide a low-cost unit, various refinements present in the latter were eliminated. A ¾-1 hp. gasoline engine in a compartment at the front of the trailer body drives a pump that circulates brine from the brine tank at the front of the body through a series of coils which run the full length of the body at both sides. Aluminum radiating fins around the pipes spread the cool air throughout the body.

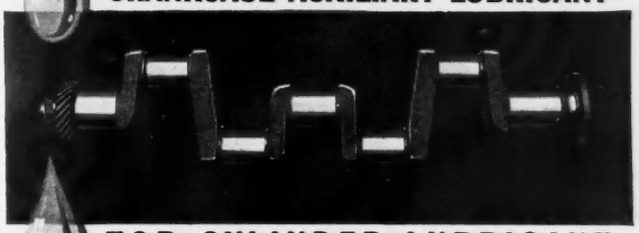
The McCord refrigerating system differs from all mechanical systems in that it has no moving parts, with the exception of the motor-driven fan which circulates air over the cooling coils. In this system, liquid propane is carried in a pressure cylinder under the truck body. By its own vapor pressure the propane is led to a tubular convector inside the truck body. There it is expanded to a dry gas and during the process latent heat of vaporization is absorbed from the contents of the truck body, producing refrigeration. The gas is then led through pressure regulating valves to the carburetor and consumed as fuel by the truck engine. Having an extremely high octane rating (125) it can be used advantageously in high-compression engines. Propane is stored either by direct filling or by a cylinder exchange.

DEVELOPMENTS in the use of solid carbon dioxide have also advanced truck refrigeration remarkably. The complicated and costly system of body ducts originally advanced has been effectively substituted with devices involving the use of metal plate conductors. These are known as bunker systems, several variations of which are available.

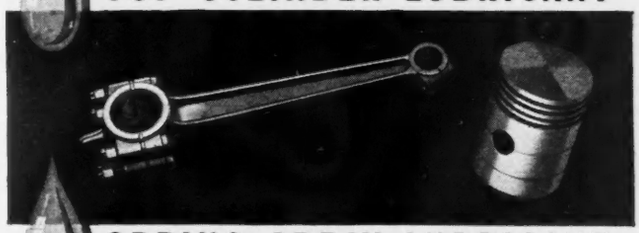
The simplest is an inexpensive, galvanized-iron, suspended bunker that is coming into wide use particularly by common carrier truck lines. Suspended type bunkers are hung from roof of body by straps affixed to roof by lag screws running through roof lining into roof carlins (cross-bows). Spacer

FOR THE "Changeover", OILDAG* ASSURES EXTRA PROTECTION WHEN USED AS A –

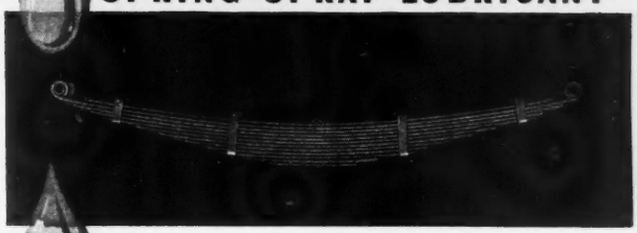
CRANKCASE AUXILIARY LUBRICANT



TOP CYLINDER LUBRICANT



SPRING SPRAY LUBRICANT



A wide choice of excellent auxiliary lubricants containing "Oildag"* Brand colloidal graphite (in oil) is available to automotive dealers, jobbers and wholesalers.

The use of these products is invaluable for protection of new and used cars alike. The graphoid surface formed on the friction parts easily withstands the temperatures existing in the combustion zone of an engine, thus safeguarding against metal-to-metal contact when momentary oil film rupture occurs.

Spring spray oils are especially efficient when charged with Acheson's colloidal graphite. The fine particles of graphite readily penetrate between the springs giving a pressure resisting solid lubricant that not only cuts squeaks to a minimum but lasts longer.

Send for Booklet AC

*Reg. U. S. Pat. Off.

REG. U.S. dag PAT. OFF. COLLOIDAL PRODUCTS

ACHESON COLLOIDS CORPORATION
FOUNDED (1908) AS ACHESON OILDAG COMPANY
PORT HURON • MICHIGAN

. . . here's good news!

New 20-Ton Model

HYDRAULIC JACK

$30.00

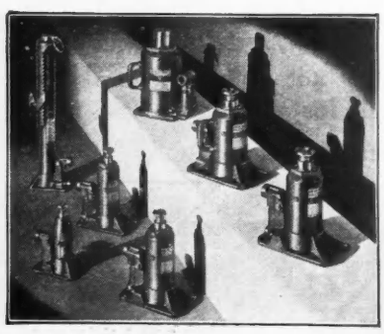
NET TO FLEET OWNERS

BUILT RIGHT—PRICED RIGHT

IF you operate or service any "big jobs"—you'll want this sensational new 20-ton capacity Hein-Werner Hydraulic Jack. . . . It's a natural. . . . Has 10" low, 6" lift, 16" height, only weighs 45 lbs.—and price to fleet operator is only $30.00 net (West Coast $31.00).

The superior features of this new Model 20.21A Jack are characteristic of the complete line of Hein-Werner Hydraulic Jacks. . . . All are compact, sturdy, easy to operate—and represent unmatched values. All are *tested at* 1½ *times* rated capacity and are SAFE.

Other models in this line include the "Bullet" Model, 1½-ton capacity at $2.80 (West Coast $3.10) . . . For light trucks, 3-ton models at $7.95 (West Coast $8.45) . . . 5-ton models $9.95 (West Coast $10.65) . . . For medium heavy trucks, motor coaches and shop use—7-ton models $13.45 (West Coast $14.50) . . For heavy trucks, buses and shop use—12-ton models $19.95 (West Coast $21.00) —and for modern passenger cars, our new BUMPER-LIFT Model at new low price of $4.95 (West Coast $5.65) . . . All prices are net to dealer or fleet owner.



HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

FEW MODELS ENGINEERED TO DO THE WORK OF MANY
HEIN-WERNER hydraulic JACKS

strips separate top of bunker from roof of body, permitting air circulation. Where inside of roof is curved, these spacer strips are cut to take up the roof camber and permit level hanging of bunker. Wing nuts may be substituted for lag screws to facilitate removal of bunker in winter weather or when vehicle is in nonrefrigerated service. A contemplated improvement will be a collapsible bunker that will enable the operator to fold the bunker against the roof or wall when it is not in use.

In the Icefin bunker type the base has a plate of special conductor metal. Solid carbon dioxide rests on this and heat from the cargo is conducted to the under surface of the refrigerant, as the four sides and top are protected by insulation. The purpose of this is to have the refrigerant evaporate down with a constant cross-section to give an unchanging heat-absorbing surface. Temperature is controlled by means of resistor pads inserted between the refrigerant and the conductor plate.

Meyer Body's patented Frigid-Fin is a bunker type that loads from the interior of the body by means of a hinged base-plate. It is distinctive also in that all six sides of the metal bunker are exposed. The four sides are metal-finned.

The Zocold system, made by Driice Appliances, Inc., is a bunker type with a patented circulating system.

A temperature control that may be used in connection with any of the refrigerants is Mack's Statotherm. It consists of a thermostat, controller and blower system. It will regulate temperatures within 1 deg. for heating as well as refrigeration, or will combine the two functions in one installation. If desired, it will control humidity.

A.T.A. Convention in Chicago

The A.T.A. annual convention will be held in Chicago again this year. The date will probably be in October.

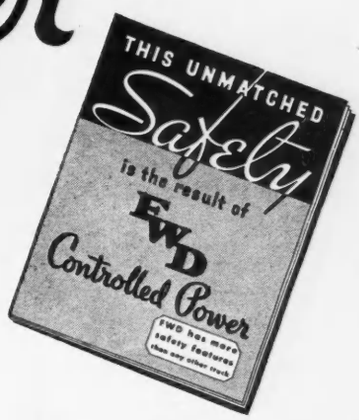
Silver Fleet System Formed

Formation of the Silver Fleet System to serve 700 direct points in the Southeast and Middle West was completed with an agreement between the Georgia Highway Express, Inc., Atlanta; Georgia Motor Express, Inc., Atlanta; and Silver Fleet Motor Express, Louisville. Each of the three will retain its separate corporate identity.

Wisconsin and Yellow Lines Join

Wisconsin Terminal Warehouse, a trucking company with its home office at Madison, and Yellow Truck Lines have merged. The new concern will operate as Yellow Truck Lines between cities in northern Illinois, throughout Wisconsin and as far north as the Twin Cities of St. Paul and Minneapolis.

Controlled Power enables the FWD to 'take' the roads as they come!



OVER-SPEEDING of the FWD Truck is not necessary in order to make better trip time . . . Equal distribution of load and power to the four driving wheels gives the FWD the ability to go into curves, climb hills, travel over slippery roads at high speed with safety because of its balanced traction . . . It takes the roads as they come.

It is no wonder that the FWD, today, sets the standard for safety, efficiency, economy and dependability . . . Faith in the principle of the four-wheel-drive and constant engineering research have produced the truck that delivers the greatest value for the transportation dollar.

The FWD will give you consistently fine performance and economy of operation with the minimum of maintenance.

Send for a copy of the new FWD Safety book.

FWD

THE FOUR WHEEL DRIVE AUTO CO.
CLINTONVILLE, WISCONSIN
***Canadian Factory*, KITCHENER, ONTARIO**

TRUCKS
1½ TO 15 TONS

5 STEPS TO UNMATCHED TRUCK PERFORMANCE » » »

1. GREATER SAFETY. Front axles are set back, resulting in **power,** as well as load being distributed to all four wheels. This gives the FWD sure footing on slippery pavements, in congested traffic, and when going around curves.

2. GREATER DEPENDABILITY OF SERVICE. Reserve power, rugged construction throughout, and true application of the four-wheel-drive principle, insure continuous operation under any condition. Backed by a nation-wide organization of parts depots and service men available at a moment's notice.

3. FASTER SERVICE. FWDs, with their powerful engines, wide range of gear ratios and four-wheel traction cut down trip time by being able to "make" the hills, curves, and poor going, faster than average trucks. No necessity for overspeeding on the straight stretches.

4. WIDER RANGE OF OPERATION. Four-wheel traction enables the FWD to handle its regular hauling job easily and do the tough jobs as a matter of course.

5. OPERATING ECONOMY. Definite savings are made in gasoline, tire wear, maintenance cost, and other "out-of-pocket" expenses. This is the result of equal distribution of power, load, and scientific four-wheel-drive construction throughout.

CONTROLLED POWER ON AND OFF CONCRETE

Third Axles Pay With Payloads

(CONTINUED FROM PAGE 28)

The experiences given here cover a variety of third-axle makes. The various makes, for purposes of discussion, may be reduced to two types—the dual-drive type in which both rear axles are made driving axles, and the "dead" axle type which today is not so dead because developments in design tend to make some makes quite alive. Some of the dual drives permit of arrangements that extend the drive also to the front axle, giving a six-wheel-drive. And some of the "not-so-dead" types carry arrangements for a chain and sprocket drive on the rear wheels, to provide better traction when conditions demand it.

In the two-axle drive class are Alma, the Grico made by Gear Grinding Machine Co., the Thornton Tandem, and the Warford.

The Alma four rear-wheel drive features a direct-coupled construction, and this may be combined with the Alma front-drive in a six-wheel-drive unit. These units are new and details are lacking.

The Grico features the Rzeppa constant velocity universal joints. The Grico reduction gear case, including a third differential, has two sets of gears. Operated by a lever in the cab it provides eight forward speeds and two reverse speeds with the truck transmission. Included in the case is a speedometer drive. The entire unit includes frame reinforcements and special double springs.

THE Thornton Tandem unit consists of two standard production axles, a two-speed transfer case (with two trains of helical gears) between the axles, two constant velocity high angularity universal joints between the transfer case and the axles, dual springs on each side pinned to axle brackets and mounted on trunnion brackets supported from the frame at either side. A Timken high traction third differential is incorporated in the transfer case. An opening for a power take-off unit is provided near the top of the case.

Warford specializes in taking a Ford truck, equipping it with Warford units, and selling the complete vehicle as a Warford 8-wheel-drive, 10-wheel truck. The drive is on the two rear axles, which have dual wheels. The units include a heavy-duty type clutch of 11-in. diameter; special frames with reinforced I-beam section cross-member and tubular spring supports; 10-ton type springs; dual range transmission giving eight forward speeds and two-reverse; large-section front axle and two heavy-duty rear axles of full-floating type, with independent synchronized drive; service brakes with braking area of 500 sq. in.

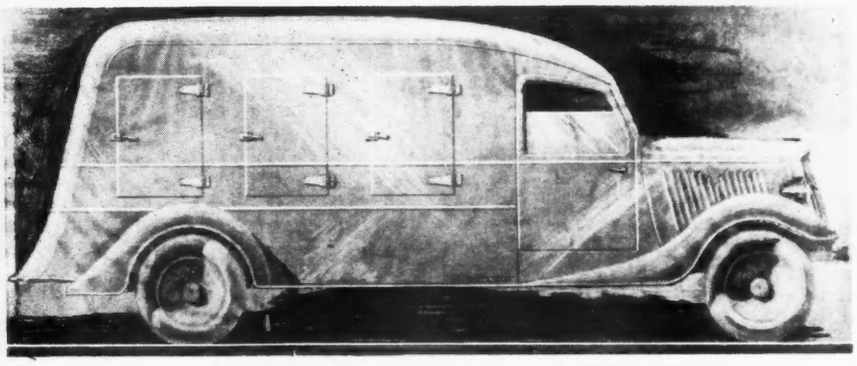
IN the other class are Trucktor and Maxi (made by Six Wheels, Inc.), which also have the chain and sprocket arangement when desired, and Truxmore (made by Truck Equipment Co.). Acme, Perfection, LeMoon, Utility. and others.

The principal structural elements of the Trucktor are: One-piece, alloy, heat-treated steel axle, torque arm and hauling member, rocket arms and shackles and slipper springs. The torque arm and hauling member is a massive yoke that connects the Trucktor axle to the truck through a rubber ball joint of universal action. This gives the device utility similar to the tongue of a wagon in assuring accurate tracking of wheels. It absorbs braking torque and relieves the springs of strain due to braking torque. The rocker arm

(TURN TO PAGE 124, PLEASE)

This Design Can Be Executed From Standard Parts in

MET-L-WOOD



Giving your trucks a custom-built appearance with the economy of standard panel assemblies is not at all difficult when Met-L-Wood is the material. It has been done time and time again with huge success.

Met-L-Wood provides the strength and stiffness of steel combined with the lightness of wood. It provides a surface for finishes that keeps trucks handsome for years. By the use of patented fasteners (which stay tight for the life of the body) wear is eliminated with consequent repairs.

Met-L-Wood design gives 15 to 25% greater efficiency in insulated bodies than any other construction because frame work is eliminated. Engineering the job to your special requirements is a feature of our service that is free.

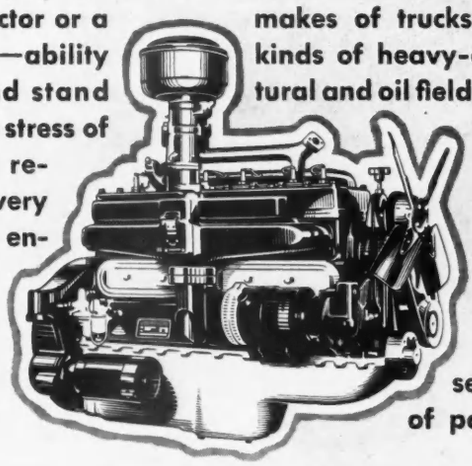
Bodies of Met-L-Wood are profitable. To inquire immediately is to start receiving those profits early.

MET-L-WOOD CORP.
6755 W. 65TH STREET
CHICAGO, ILLINOIS

HERCULES

ENGINES

STAMINA—The first requirement of every piece of heavy-duty equipment, whether it be a truck, a bus, a tractor or a power shovel, is *stamina*—ability to take punishment and stand up under the continuous stress of productive work. This requirement applies to every part but above all the engine supplying the power *must* be right—rugged in design, well built and easily serviced. Hercules Engines have been proving their *stamina* for more than twenty years—in leading makes of trucks and buses and in all kinds of heavy-duty industrial, agricultural and oil field machinery. Hercules has had long, varied and practical experience in designing and building heavy-duty power plants—both gasoline and Diesel—and this experience is at the service of manufacturers of power driven machinery.



HERCULES MOTORS CORPORATION, Canton, Ohio

America's Foremost Engine Manufacturer • Power Plants from 4 to 200 H. P.

(CONTINUED FROM PAGE 122)

and shackles device on each side connects the rear springs of the truck to the slipper springs and acts like a beam scale, automatically distributing the load. The slipper springs are full size with slipper action at the rear brackets. The available chain and sprocket drive is mounted between the dual tires. The chain, when not in use, may be carried in the tool box. When needed they may be applied in a few minutes.

The Maxi unit features the parallelogram formation of radius rods and springs. This design, by use of radius rods, maintains the equidistant position of axles under severe braking stresses and eliminate the jumping effect. The springs are suspended on trunnions and their ends are attached to the axles by means of universal-jointed connections. The load carried on the trunnion is distributed to each axle. The auxiliary chain drive is by means of an attachment mounted between the discs of dual wheels.

TRUXMORE'S outstanding mechanical features are its load distribution adjustor, its oscillating and sliding action and its gravity spring suspension. In the first a simple screw adjustment provides means for shifting weight to the drive axle from the other axles when more traction is needed. The adjustment is made with a wrench, even when the truck is fully loaded. The oscillating and sliding action permits one wheel to rise or drop as much as 14 in. from the level of the other rear wheels, without weight shifting or strain. The gravity spring suspension absorbs road shock and curbs sideways.

In the Acme the radius rods transmit brake torque direct to the frame, a ball-and-socket joint giving unrestricted flexibility. A specially designed pivot at the massive tubular Acme axle allows the axle to float. Springs are seated in a spring chair pivotally mounted on the ends of a tubular cross-shaft. The spring ends rest loosely on replaceable wear pads. Extension channels reinforce the truck frame.

Perfection third axles are made exclusively for Ford and Chevrolet trucks. The third axle is provided with shock-absorbing radius rods which are attached to the tops of the rear spring shackles and terminate on their forward ends through pivots on the trunnion shaft journal. Springs are pivoted in the exact center and rotate on bronze bushings around the trunnion shaft. Extension channels reinforce the truck frame.

The LeMoon unit for Fords and Chevrolets is of simple design. The novel spring suspension with rubber-bushed spring ends provides a floating axle to eliminate twisting and straining of the frame. Only eight holes need to be drilled in making an installation.

Besides Unique Spring Suspension

B&J TRAILERS

Offer Outstanding Features

Gravity Spring Suspension, standard equipment for three years on B & J Trailers, is not the only thing you get when you buy a B & J Trailer.

The units assembled into B & J Trailers have been fully proved in years of service. Their quality is in every way equal to the quality of design that is fast pushing B & J Trailers into the leadership of the fleet field.

Timken axles . . . tubular for lightness, heat-treated for toughness and hardness, provided with larger spindles for strength, having larger bearing area to reduce friction, are in B & J Trailers.

Your choice of brakes . . . Bendix or Timken mechanical, Lockheed hydraulic, Warner electric, all equally efficient but in different ways.

Budd or Dayton steel wheels . . . to match the wheels of your tractors, promoting service simplicity and improving appearance.

The new rubber-mounted B & J fifth wheels in two types and five models to fit every hauling requirement.

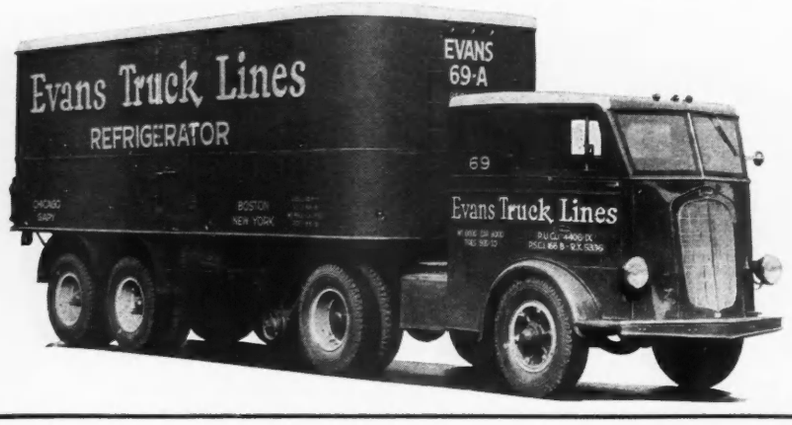
Quality construction is cheapest in the long haul. That's why you'll make the best profit by hauling with B & J Trailers. Learn their other high qualities. Write now!

DEALERS:

Features like these make selling easier. Repeat sales keep profits coming for years. Ask about B & J's distributor plan for dealers.

B & J TRAILER COMPANY

3929 Michigan Ave. Chicago, Ill.



Lathan-Besler Power Brake Catalog

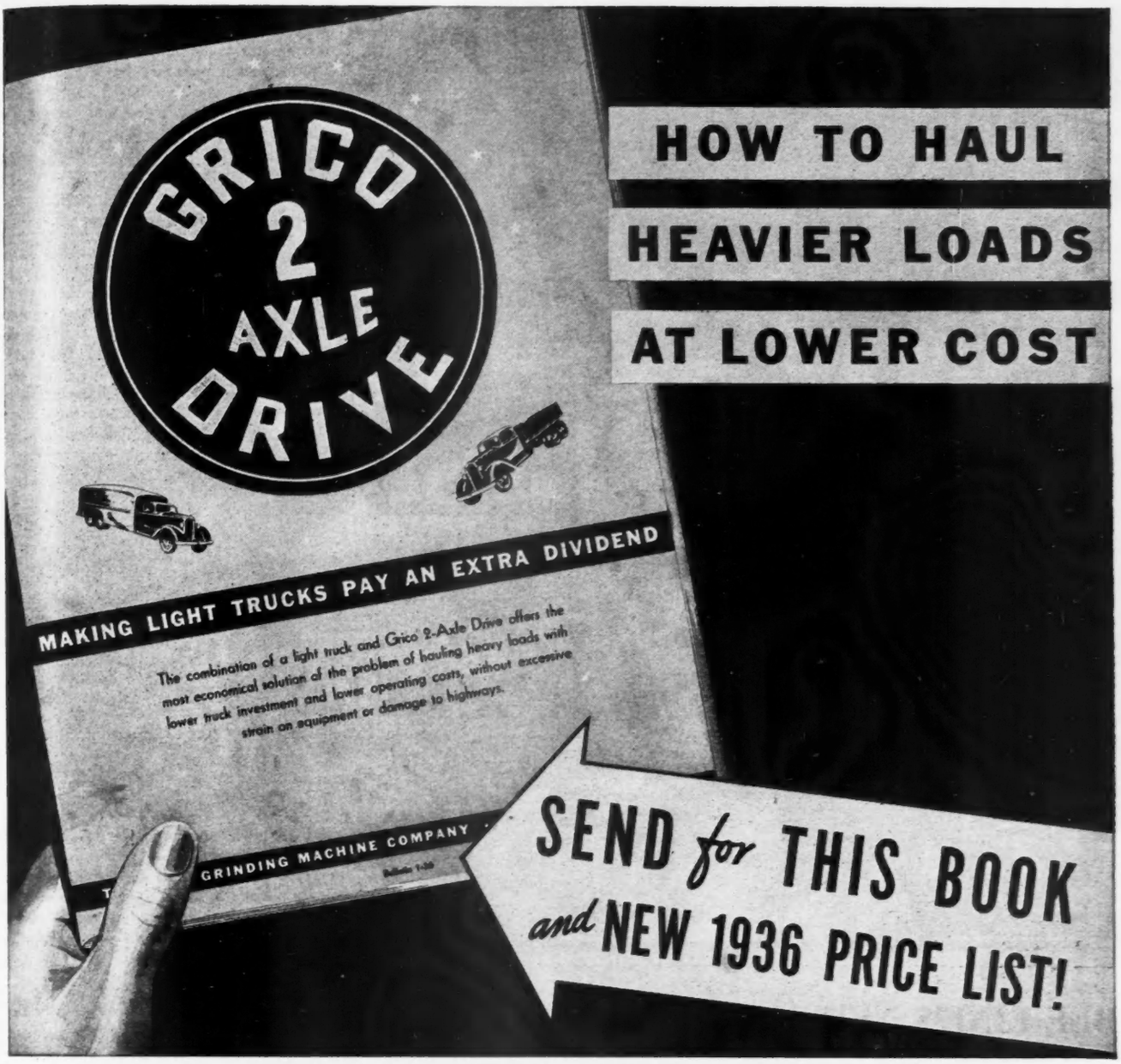
The 1936 Lathan-Besler Power Brake Catalog is now available to fleet operators, who may obtain a copy by writing to the company at San Francisco or by addressing COMMERCIAL CAR JOURNAL. This comprehensive power brake catalog covers both air-suspended and vacuum-suspended power units, a complete line of control valves for every purpose, couplings, fittings, connections, tubing and accessories to meet every requirement. The catalog also includes numerous technical details regarding this equipment.

Indiana Reciprocity Cards

Trucks from states having reciprocity agreements with Indiana must carry registrations cards obtainable from the Indiana P. S. C.

A.S.I. Show

The date and place where the Automotive Service Industries show will be held will be determined at a meeting of the National Standard Parts Assoc. and the Motor & Equipment Mfg. Assoc., April 7 in Chicago.


GRICO
2
AXLE
DRIVE
HOW TO HAUL
HEAVIER LOADS
AT LOWER COST
MAKING LIGHT TRUCKS PAY AN EXTRA DIVIDEND
The combination of a light truck and Grico 2-Axle Drive offers the most economical solution of the problem of hauling heavy loads with lower truck investment and lower operating costs, without excessive strain on equipment or damage to highways.
GRINDING MACHINE COMPANY
SEND for THIS BOOK
and NEW 1936 PRICE LIST!

MAKE MORE PROFIT WITH LIGHT TRUCKS

A modern method of making light trucks haul a heavier load with entire safety to the truck and road.

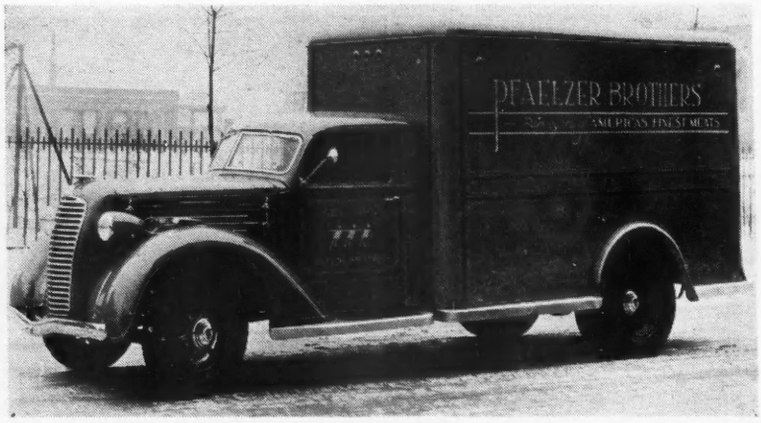
A proven device for securing heavy duty capacity with lower original investment and light truck operating costs.

Whether you operate one or one hundred trucks, you should have complete information on this up-to-date haulage equipment. Learn how to make light trucks carry a heavier payload, pay more profit and pull the load under all conditions.

Send for this free, money saving information at once. Correspondence is invited from distributors in unoccupied territory.

GRICO
2
AXLE
DRIVE

THE GEAR GRINDING MACHINE COMPANY - CONANT at R. R., DETROIT, MICH.



AT LEFT

Wilson haircraft was used to insulate this refrigerator body built by Maremont Auto Products and operated by Pfaelzer Bros. The French type roof has 3 in. of insulation, and 2 in. in sides and floor. The full panel body is 11½ ft. long, 70 in. wide and 66 in. high. Rub rail is special aluminum and panels are of galvanneal.

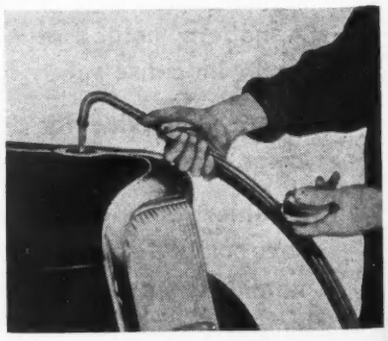
Brake Shoe Grinder

A new type precision brake surfacer is announced by the Stiles-Medart Co., St. Louis, Mo. This combination tool is said to have provisions for checking concentricity and worn condition of the brake drum, accurate centering of the brake shoes on the car, and grinding of each brake shoe to the desired diameter. Maximum and minimum drum-to-shoe clearances can be accurately determined and

settings made to eliminate squeals, hard pedal, grabbing, etc. This machine is adaptable to passenger cars and light and medium sized trucks. It is provided with a universal, double-acting chuck for center mounting on either a front axle spindle or tapered rear axle shaft.

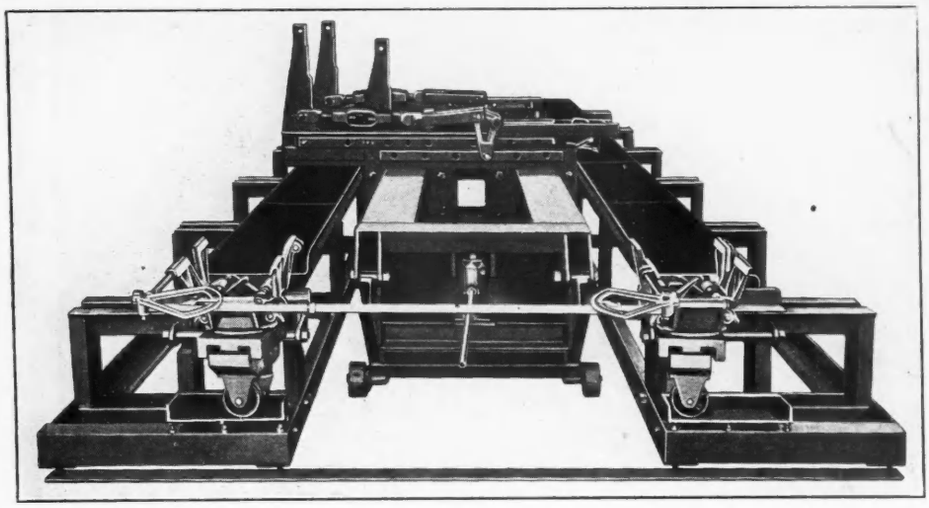
Schrader Radiator Faucet

THE No. 8250 Schrader radiator faucet offers a speedy method of filling passenger car and truck radiators without splashing water. The long, specially shaped nozzle services all types of inlets and the button control provides for a fast or slow stream



as desired. To prevent rust or corrosion, the body and nozzle are both of brass and the plunger pin, spring and lever are of stainless steel. An adjustment nut takes up on the packing as it wears. This faucet is a product of A. Schrader's Son, Div. of Scovill Mfg. Co., Inc., Brooklyn, N. Y.

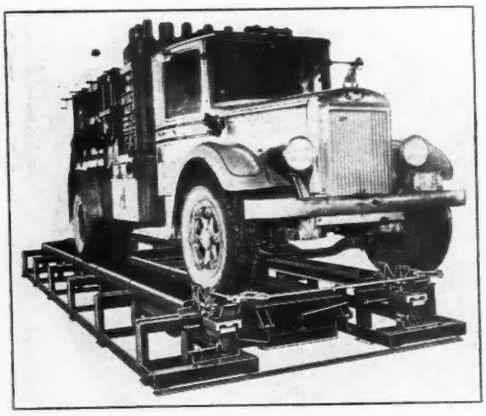
AGAIN BEE-LINE IS FIRST



BEE LINE'S NEW UNIVERSAL ALIGNER

For Trucks—Trailers—Busses—Passenger Cars

The New Super Model Bee Line Chassis Aligner



No Job Too Large—No Job Too Small

This machine is designed and adapted to handle any make or model of motor vehicle.

The Bee Line Manufacturing Company, the outstanding producer of automotive alignment equipment, takes pride in announcing a new Universal Chassis Aligner. This Super machine is in reality a large precision gauge upon which any vehicle may be driven. All of the parts of the chassis are accurately checked, including frame, rear axle assembly, rear wheels, front wheels or suspension systems and the geometry of the complete steering system.

Write today for further information about this New Universal Super Bee Line Aligner.

BEE LINE MFG. COMPANY

DAVENPORT IOWA

110 WALKER ELECTRICS in ONE ORDER from DUGAN BROS.

MR. E. JOHN DUGAN of DUGAN BROTHERS WRITES:

"I am attaching hereto our formal order for 110 Walker Electric Trucks for immediate delivery.

"As you know, we have been operating Walkers for nine years along with gas trucks and horse drawn wagons. We are purchasing these additional 110 Walkers because we find their operating cost is lowest in their field of operation. It is of particular importance to us, also, that their operating cost can be accurately pre-determined as all major items of expense are fixed.

"This order will bring our fleet of Walkers to a total of 175."

•

We have prepared an informative illustrated booklet on The Electric Truck, its profitable operating field and advantages. We invite you to write for your copy.

WALKER VEHICLE COMPANY
DIVISION OF THE YALE & TOWNE MFG. CO.
101 WEST 87th ST. - CHICAGO, ILL.

(CONTINUED FROM PAGE 116)

Acme Gage

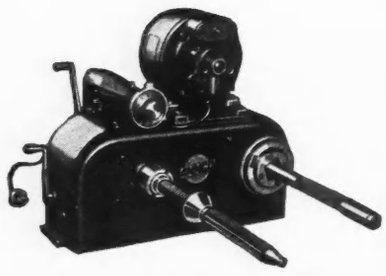
ACME AIRLINE tire gage is said to permit free flow of air due to its "straight line" construction. Two separate valves are provided, one for the passage of air and the other for pressure readings and deflation. The gage housing is sealed against dirt and weather, and the reciprocating pressure indicator is read through a large opening on top of the gage. It registers up to 120 lb. The outfit includes a hose 15 in. long and a coupling and swivel chuck. Acme Air Appliance Co., Inc., 254 Park Ave., Brooklyn, N. Y.

Brake Rivets

GREY-ROCK rivets for brake and clutch relining are now plainly marked for quick identification. The catalog number is stamped on the head, which makes it possible to easily sort the rivets in case they become mixed in handling. All rivets are made from brass wire especially prepared for the purpose, and are packaged in tray-type boxes that can be used without dumping the entire contents of the box. They are a product of the U. S. Asbestos Div. of Raybestos-Manhattan, Inc., Manheim, Pa.

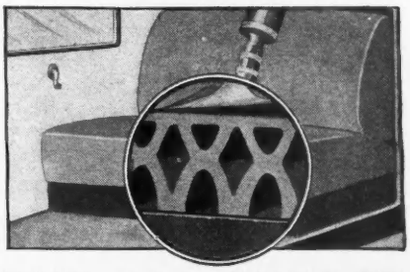
Hone and Reamer

THE new Ammco honing and reaming machine provides a rapid method of fitting piston pins and insures an accurate fit with full bearing surface regardless of the type or size of the pin. This machine is made in three sizes, the largest model HR providing honing speeds of 300 and 500 r.p.m. and reamer speeds of 60 and 95 r.p.m. The Ammco hone is said to eliminate bell-mouth through the use of metal-backed abrasive pads and a sliding centering cone. The spring actuated centering cone slides on the grinder shank and makes it easy to grind each boss separately. Automotive Maintenance Machinery Co., 2104 Commonwealth Ave., North Chicago, Ill.



Hone and Reamer insures accurate fit

★ ★ **Black Diamond** ★ ★



THE ALL-RUBBER SEAT CUSHION

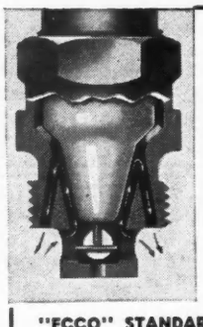
That Is Revolutionizing The Seat Industry

These remarkable Black Diamond All-rubber seat cushions and back rests are again leading the procession for 1936 and have a definite, established popularity and acceptance. New designs recently announced are the result of extensive research—laboratory and road test—plus the *proving ground* of actual service with fleet owners everywhere. No upkeep expense. Available for any size or shaped cab. Secure complete information and prices by writing direct.

KARPEX MANUFACTURING CO.
1424 E. 19th St., Indianapolis, Ind.

Motor Tune-Up
is a real profit and business building service.
Send for free Tune-Up Charts
CARTER CARBURETOR CORP.
2834-56 N. Spring Ave. St. Louis

A New Safety Device for TRUCKS and TRAILERS
The Robinson
AUTOMATIC BRAKE LOCK
Holds break-a-ways . . . provides Sure and Safe parking . . . meets all legal requirements . . . easy to install . . . automatic and unfailing. Write for illustrated details and prices.
AMERICAN DIE & TOOL CO.
READING, PENNA.



NEW SPARK PLUG BREATHES
Note the Ventilated feature. Each stroke of the piston drives clean, cool gases up around the porcelain and points and the plug stays cool and clean. Road tests show smoother, more efficient engine performance and much longer life. Write for details.
"ECCO" STANDARD SPARK PLUG CO.
4505 Wayne Ave., Philadelphia, Pa.

King Motor Tester

MODEL MT-80 King tester is designed primarily for the smaller shop, or as an auxiliary unit in the large shop. It enables the mechanic to make a complete motor tune-up, including tests on the coil, battery, generator, condenser, etc. A feature of this outfit is the King meter which is said to eliminate all guess work by giving direct readings. The model MT-80 meter, which sells for $85.00 is made by The Electric Heat Control Co., 9123 Inman Ave., Cleveland, Ohio.

Heavy Duty Sockets

THE Plomb Tool Co., 2209 Santa Fe Ave., Los Angeles, Cal., has announced a new line of heavy duty, 12-point sockets having a ¾-in. square drive, which is the drive most generally used for heavy work. These sockets can be secured in the following sizes: 2 3/16, 2¼, 2⅜, 2½, 2 9/16, 2⅝, and 2¾ in. They are cross drilled for a 1-in. bar which can be used in place of the regular Plomb heavy duty ratchet.

Brake Wedge Bolt

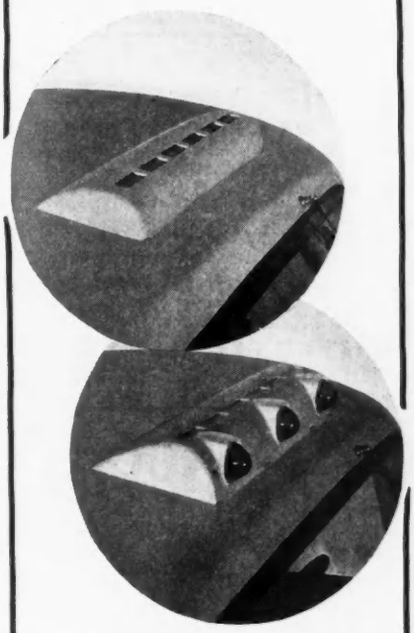
THE Palmer 2051X brake wedge bolt for Ford trucks is designed to give full-floating action on the front wheel brakes of trucks made prior to 1935. The equalizing pin is case hardened and permits the brake wedge to move horizontally as well as vertically. Palmer Mfg. Co., 1131 Roosevelt Rd., Chicago.

THORNTON
Dual Ratio Four Rear Wheel
DRIVE
FOR TRUCKS!
Is setting new records
THORNTON TANDEM CO.
Detroit

CLASSIFIED ADVERTISING

SALESMAN—fine line Oils, Greases, Soaps on commission. Old reliable manufacturer. Baum's Castorine Co., Rome, N. Y.

N-L Flexible Ventilators for truck cabs



Top View: N-L Flexible Ventilator without lights. Attractively streamlined.

Lower View: N-L Flexible Ventilator complete with signal lights. Handsome streamline design.

THIS N-L Flexible Ventilator removes the foul air and creates a constant circulation of air, without drafts, while the truck is in motion. A highly efficient ventilator of attractive appearance.

Made of pure rubber, the N-L Flexible Ventilator fits the roof curvature. Is quickly and easily applied and is absolutely weather-tight. It comes plain or equipped with three safety lights. A unit offering many advantages over the old type of ventilator, yet at comparable cost. Send for literature.

The NICHOLS-LINTERN CO.

Flexible, Standard Roof, and Dash Ventilators; Truck and Bus Sanders

7960 Lorain Ave., Cleveland, O.

Ears to the Ground

(CONTINUED FROM PAGE 11)

system and defroster. The defroster conducts warm air from under the hood through a valve and up between the two panes of a double windshield, exhausting through a roof louvre. The ventilating system intakes through louvres at the door tops and the regulating valve is the top travel of the window glass. The exhaust is at the rear of the cab, where another valve helps to control the temperature. Mr. Plank is, this department assumes, open to negotiation.

Drive Ditty

Not being content with a front-drive unit that changes a conventional truck into a four-wheel-drive, one manufacturer is about ready with a driving third axle. With a unit in front and a unit behind the ordinary truck becomes a six-wheel drive.

Filters Favored

Filters have become a favorite subject of our dispatches. From no less than three sources word comes concerning new oil filters. From among the details so recorded there stand out two significant reports. One is that a newcomer to the business is about to spring a "bell ringer." The other is that an established manufacturer has surmounted all the difficulties in connection with a Diesel filter and will soon announce a new filter of this type with all of its advantages.

Injector Interruption

The Diesel fuel injector which this department has been nursing along now for some months is still in the experimental stage, we have been advised. And just when we thought we would be able to announce it, too.

Valve Verse

The fellow who thought of stellite valve seats had no mercy on valves when he provided such a hard seat. Now with the thought that if the seat can be tough the valve can, too, one manufacturer is about to produce a stellite-faced valve.

Fifth Wheel Fortunes

From widely separated points there arrive notices that two new fifth wheels will beat summer to the market. On one there is no detail. On the other it seems that it is possible to drive a hoist or any other power requiring mechanism regardless of angle.

Readers' Revenge

Having been set upon by an insur-

This Spring
You'll Need The
HALL
ECCENTRIC
VALVE SEAT GRINDER
As Never Before
Every month 3 million more valve seats are being ground ECCENTRICALLY by 36 leading factories. To service these seats the factory way you need the Model E-J Grinder this Spring as never before. Grinder comes complete with Diamond Dresser in Metal Case. Suction System shown below keeps grit and grindings out of motor. Order from your Jobber today or write factory for full information.
HALL
THE HALL MANUFACTURING CO.
1610 Woodland Ave.
Toledo, Ohio

BURCH

Balanced POWER for RAISING or LOWERING

DUMP BODY HOIST

ONLY ONE MOVING PART

Balanced power for raising or lowering—automatic locking, any position—one moving part—no gears—no oil lines—no heating or foaming of oil. Plain and Braced Side Bodies—1½ and 2 Yard capacities.
FAST! POWERFUL!

Write for Literature

THE BURCH CORP.
Dept. A– CRESTLINE, OHIO

ROTAWASHER

Washes Trucks & Autos *CLEAN*

Many owners of large fleets of trucks, buses and cabs, even street railway companies and meat packers, rely on Rotawasher for thorough and economical washing service.

There is no other washing equipment like Rotawasher. It is scientifically correct, and astonishingly simple. Rotawashers in use for 10 years are still giving 100% satisfaction.

Write for full information

THE ROTAWASHER CORP.
Dept. CC,
118 E. St. Clair Ave., Cleveland, O.

ance company for not being able to solve rear-end collisions when called upon to do so, this department now acts without fear. It calls upon its readers to describe in detail any rear truck or trailer bumper that they may have in use to prevent passenger cars from telescoping under the rear end of a truck or trailer. Drawings or photographs should supplement the description. And just to remove such fleet designers as respond from the amateur class, this department will pay for the information.

White Modernizes Its Line

(CONTINUED FROM PAGE 42)

The standard brakes on the 720, actuated by vacuum booster, are of the White-Lockheed hydraulic type with air brakes optional, and air brakes are standard equipment on the 722. Respective lining areas are 560 and 632 sq. in. with ¾-in. molded lining. The emergency brakes are of the disk type with four shoes.

Both models use alloy steel frames, heat-treated, with a section for Model 720 of 8½ x 3 1/16 x 5/16 in., and 8½ x 3⅛ x ⅜ in. for the 722. Reinforcing plates are employed for wheelbases of 176 in. and longer.

WITH the introduction of the two heavy-duty trucks, White Motor also streamlined and modernized two medium heavy-duty trucks, Models 712 and 718.

New and more powerful engines are used, as is evidenced by the fact that in the 712 a 303 cu. in. engine, 3 25/32-in. bore by 4½-in. stroke is used with a torque of 215 lb. ft., and in the case of the 718, which uses a 318 cu. in. engine, 3⅞-in. bore by 4½-in. stroke, the torque output is 230 lb. ft. Both of these six-cylinder engines have heat-treated, seven-bearing, counterweighted crankshafts and White-patented combustion chambers which permit the use of a compression ratio of 5.5 using any standard brand of gasoline. In addition, the lubrication is such that all moving parts of the engine are positively lubricated from the oil pressure system. Stellite exhaust valve seats are standard equipment.

Integral crankcase and cylinder block construction is employed in this design and a factory-built replacement engine is offered in each case at a nominal cost. The accessories are admirably grouped for accessibility and provision is made for generator speeds to fit every kind of service. Quickly interchangeable, high-precision bearings are employed and the entire engine assembly is flexibly mounted in rubber. The main

PER-MAX
the Permanent
TRUCK FINISH

Ask for list of prominent fleets successfully using PeR-Max. We will send one pint of black for test if you will write us giving the size of your fleet.

RINSHED-MASON COMPANY
Manufacturers of Automotive Finishes
5935-71 Milford Street, Detroit, Michigan

Replacement Parts for MACK TRUCKS

We can show you a large saving on parts for your Mack Fleet. We specialize in guaranteed replacement parts for Mack trucks. *Write.*

UNIVERSAL PARTS INC.
6310 Penn Ave. Pittsburgh, Pa.

TRADE MARK
NOC-OUT
HOSE CLAMPS
THE HOSE CLAMP WITH THE THUMB SCREW

Standard equipment of the automotive industry. Adjustable - one size equals many. Quick tightening, perfect seal. At all Jobbers.
Pat. No. 1,382,813.

WITTEK MFG. CO.
4305 W. 24th Pl., Chicago, U.S.A.

Ahlberg Ground Bearings

40%
Saving Over New Bearing Costs

AHLBERG BEARING CO.
Chicago

Branches and Distributors Everywhere

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IMPORTANT MONEY

is being saved by fleet operation through the use of

PUROLATOR
OIL FILTERS

We invite your inquiries . . .

MOTOR IMPROVEMENTS, INC.
NEWARK, NEW JERSEY

BAKER

SNOW PLOWS

FOR MOTOR TRUCKS

THE DEPENDABLE SNOW PLOWS FOR SNUG ATTACHMENT TO ANY MOTOR TRUCK. BUILT IN MANY MODELS AND SIZES.

MADE BY AMERICA'S OLDEST MAKERS OF HIGHWAY SNOW PLOWS

Send for 32-page Catalog

THE BAKER MFG. CO.

571 STANFORD AVE., SPRINGFIELD, ILL.

SPONGE RUBBER

TRUCK CUSHIONS

as low as

$4.60

SPECIAL

For operators who desire the utmost in economy our special pieced construction complete cushion is available for as low as $4.60. Write for prices on your sizes.

ACT NOW AND REPLACE THOSE WORN CUSHIONS

Regular patented Sponge-Aire Cushions also available at attractive prices. When ordering, show size and height.

SPONGE-AIRE SEAT COMPANY, Inc.

Buffalo, N. Y.

Send For Your Copy!

New 48-page illustrated "AUTOMOTIVE CLEANING HANDBOOK" shows how others Clean Floors, Wash Trucks, Strip Paint, Clean Motors and other similar operations, saving time, turning out better work at lower cost.

MAGNUS CHEMICAL CO.

38 South Avenue, Garwood, N. J.

Mail this ad with your business letterhead and a free copy will be sent you.

bearing area of these engines is unusually large, having in excess of 31 sq. in. of projected area.

A 12-in. single-plate dry clutch with automatic adjustment is used, and in the 712 a five-speed fifth direct transmission is standard. In the 718 a five-speed transmission fourth direct with quiet helical gears in three speeds is standard equipment. These transmissions employ alloy steel case-hardened in accordance with general White practice.

THE front axles used on these models have respective treads of 61 and 70¼ in. The rear axle on the 712 is the single-reduction, full-floating type with ground axle shafts and ratios of 5.11, 5.71, 6.43, and 7.17. On the 718 a double-reduction axle with the second reduction of herringbone gears, also of the full-floating type and ground shafts, is employed. Both the 712 and 718 axles have pressed-in sleeves to carry the axle load. In the 718, the ratios are 7.22, 7.95, and 8.73. Both of these axles are White-designed and built with alloy-steel gears case-hardened with wide tooth faces.

The standard tire equipment on the 712 is 8.25/20. On the 718, 9.00/20. Optional larger size tires are furnished on each model.

The standard brakes are of the hydraulic type with ⅜-in. molded lining and a vacuum booster. Air brakes are optional on each model.

Both models provide a wide range of wheelbases with standard CA dimensions running from 130 in. to 226 in., the last for special requirements. Both frames are heat-treated and, in the case of the 712, a frame 8 x 3 x ¼ in. is used. The 718 frame is 8 x 3 x ¼ in. with a heavy reinforcing plate.

The nominal tonnage rating is 3-4 tons for the 712 and 2-4½ tons for the 718.

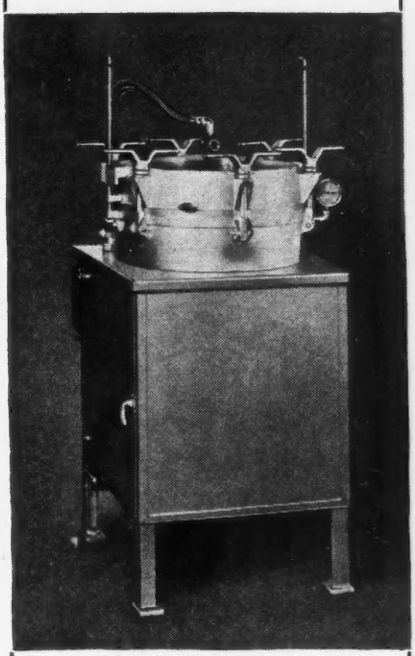
Right Angle Drill Attachment

TO aid in drilling, tapping, boring, etc., in tight corners, C. A. Koza, Inc., 464 Augustine St., Rochester, N. Y., has developed an attachment for electric drills which permits holding the drill at right angles to the work. The body of the device is made of steel, and the thrust of the drill and gears is taken up by gun-metal bronze bearings. Chrome nickel alloy steel gears are cut integral with the shafts and are heat treated and hardened. A screw feed giving one inch depth of feed is provided, although where room is limited this feed may be removed, substituting a short-end bearing. The standard drill shank used is the blacksmith shank, as this is said to permit getting into much narrower spaces and closer corners than any other type.

NOW It will pay You to Reclaim Oil—*The New*

Hilco Oil Reclaimer

with an entirely different process is the result of our ten years' experience in oil refining for fleets.



Model C—Capacity 12 gals. per day

ITS FEATURES--- proven in the field:

1. Complete restoration of your oil, removing acid and all foreign material and dilution.
2. Low first cost—low operating cost.
3. A machine that is simplicity itself, continuous, all electric and automatic.
4. Low operating temperature — high recovery.
5. Capacities from 12 to 50 gallons per day.

The Hilliard Corporation

102 Fourth Street, Elmira, N. Y.

SEND THIS COUPON

—for information on how the New Hilco pays by producing these results at a low first cost. Ask about our "PAY AS YOU SAVE" PLAN.

THE HILLIARD CORPORATION
102 Fourth Street, Elmira, N. Y.

Please send further information about the New Hilco.

Name .....

Company .....

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Write Today for Full Information About

SPONGEX

GRID CONSTRUCTION

Seat Cushions or Fillers

All Sponge Rubber Construction
Cheaper Than Springs • The Most
Comfortable Cushion Ever Made

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SPONGE RUBBER PRODUCTS CO.

DERBY CONN.

PUBLIC **Baker** UTILITY

TRADE-MARK REG U.S. PAT. OFF.

BODIES

for

- **Line Construction & Maintenance**
- **Service Connection**
- **Meter Installation**
- **Street-Light Maintenance**
- **Compressor Units**

THE BAKER-RAULANG CO.

Body Division

Foot of West 80th Street
CLEVELAND OHIO

Safety Starts in Fleet Shops

(CONTINUED FROM PAGE 15)

while the decelerometer is fastened to the running board or placed on the cab floor, where it measures the truck's stopping ability and translates it into stopping distance.

All of this sounds like business that should be wholly the fleet operator's business. No matter what it sounds like, such is not the case. The trucks do not operate on the fleet operator's property, but on the public highway, which is the property of all the people. Some 36,000 of these people are being killed yearly while on this common property, and public opinion is demanding that something be done about it, and rightly so.

Highway safety presents a very complex problem and it is doubtful if anyone can prove very much about what causes accidents. Whether or not a case can be proved for or against equipment in the hands of the fleet operator, it seems safe to assume that all fleet operators will agree with the moral principle that they have no right to transact their private business on the public highway unless they have taken every reasonable precaution to protect the people who use that highway. Surely adequate steering and brakes adequately maintained are a reasonable precaution.

To assure reasonable protection to the users of the highways some states and municipalities have seen fit to pass compulsory vehicle inspection laws. Regardless of the effectiveness of such inspections, a very reasonable principle and a very high motive can be seen in the laws that brought them into existence. But because of the varying opinions of the practicability of such inspections of fleet-operated vehicles, COMMERCIAL CAR JOURNAL has questioned many fleet operators, equipment manufacturers and safety engineers regarding their stand on compulsory inspections.

Some of those questioned feel that

The complete line that completely satisfies

HIGH • FITZGERALD BULLDOG • COMPRESSION GASKETS

Fitzgerald Gaskets

THE FITZGERALD MANUFACTURING COMPANY
TORRINGTON, CONN.

HANDY

Governors
Air Cleaners
Oilfiltors

"Standard Equipment"

HANDY GOVERNOR CORPN.
Detroit

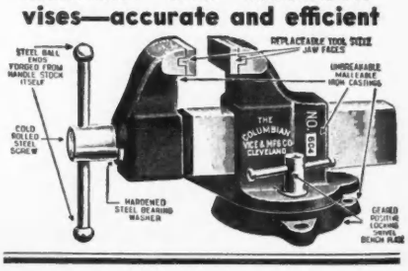
DEPENDABLE!

If you want air-brake dependability, write to the Hays Corporation, Michigan City, Indiana, for literature describing this new husky wiper that slashes through clotted mud or snow with the 100-lb. kick of the air-brake supply behind it.

AIR-PUSH

COLUMBIAN

unbreakable malleable iron machinists' vises—accurate and efficient

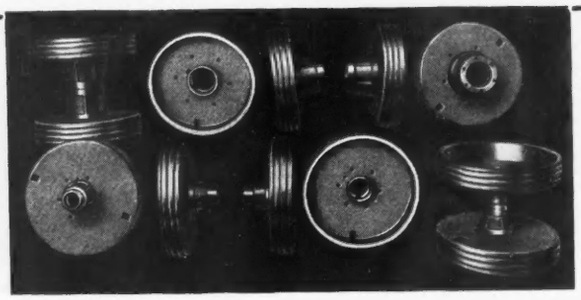

STEEL BALL ENDS FORGED FROM HANDLE STOCK ITSELF
REPLACEABLE TOOL STEEL JAW FACES
UNBREAKABLE MALLEABLE IRON CASTING
COLD ROLLED STEEL SCREW
THE COLUMBIAN VISE & MFG CO CLEVELAND
NO. 220
HARDENED STEEL BEARING WASHER

The Non-Checking Wear-Resisting, Non-Warping Alloy Metal

Developed for lasting Brake Drum service. Now offered to fleet operators for the first time after two years of actual road testing under the most exacting conditions.

Effective stopping with maximum allowable loads. Full details on request.

Write Today. Dept. D.



CEMCALLOY

CHRISTIANA MACHINE CO.
Christiana, Pa.

HAVE YOU SEEN

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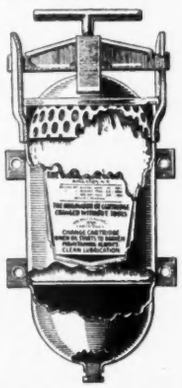
THE NEW "SUPER" EFFICIENT

W.G.B. CLAROFIER OIL

Do you know the W. G. B. SUPER MODEL CLAROFIER with cartridge filtering area of 187 cubic inches is just the oil filter you are looking for, as the SUPER MODEL is especially designed for buses and large Diesel motors?

May we have the pleasure of acquainting you with the fine construction and super-efficient performance of this SUPER MODEL W. G. B. OIL CLAROFIER, which has 2½ times the capacity of our STANDARD CLAROFIER?



The ORIGINAL CLARIFIER that made the world filter-conscious.

W. G. B. OIL CLARIFIER, Inc.
102 GREENKILL AVE.
KINGSTON, NEW YORK

DOUBLE SAFETY | POSITIVE TRACTION | DOUBLE MILEAGE

McKay Multi-Grip Double-Bar-Reinforced Truck Chains

THE McKAY COMPANY
McKAY BLDG. PITTSBURGH, PA.

compulsory inspections are the fleet man's salvation because they remove all doubt as to the condition of such vehicles in his operation that may be involved in an accident. Others feel that compulsory inspections are desirable for the passenger car driver, but that fleet operators should be exempt from outside inspection because their fleets are serviced by their own staffs and subject to constant inspection.

A spokesman for one of the nation's largest fleets adds an alarming note in his comments on compulsory inspection when he describes the feeling of security even to the point of recklessness that a driver is apt to get when his car has been passed as perfect by a legally created inspection station.

It was the consensus of the meeting at the second Commercial Vehicle Session of the Seventh Annual Greater New York Safety Conference, when this subject came up for discussion, that fleet operators should be exempt from any compulsory inspection on the grounds that they know more about inspecting their own vehicles than any agency that a governing body could set up. One proposal was that fleet operators should be permitted to report on conditions within his fleet at stated times and not be forced to interrupt his own inspection schedule just to make it coincide with dates specified by law. All of these proposals are based on the assumption that fleet shops have the equipment and personnel to qualify for the exemption.

EQUIPMENT manufacturers have realized the varying needs of fleets of varying sizes. Accordingly they have equipment for the large fleet and for the small fleet. For the large fleet the equipment as a rule involves the expenditure of more money, but the equipment will handle a large number of vehicles with a speed and completeness that is adequate for the large fleet's requirements. The equipment designed especially for the small fleet, while on the whole as accurate and complete as the more elaborate pieces, will not work with the ease and speed of the deluxe models. But then the small fleet operator finds it to his liking because he does not have enough trucks to amortize the cost of the more expensive equipment as quickly as the large fleet operator.

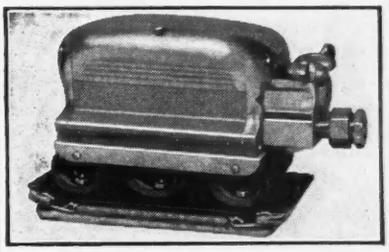
Big Truck Lines Merge

An amalgamation of two outstanding trucking concerns operating in the west and middle west has been announced. They are the interests of the Werner Transportation Co. of Minneapolis and Chicago and the Consolidated Freight Lines of Portland, Ore.

MAKE $200 to $500

In Savings

on Every $1000 You Now Spend For Hand Sanding



STERLING Speed-Bloc SANDER

(Air Driven)

A speedy time and labor-saving device that replaces hand sanding and hand finishing operations. Used for feathering spot jobs, for preparing body for paint, sanding primer coat or primer surfacer combination, sanding between coats and rubbing out lacquer or synthetic enamels, and for metal clean-up.

Used and ACCLAIMED BY MORE THAN 40 INDUSTRIES

Quickly pays for itself, then PAYS BIG DIVIDENDS. Used on both curved and flat surfaces; for both wet and dry sanding.

Write for literature.

"One Hand Guides The Sterling"

Sterling Products Co.
314-C Curtis Bldg., Detroit, Mich.

AIR IS A PART OF EVERY TIRE

THROUGH long experience, tire manufacturers have learned how to make every part of a pneumatic tire do its utmost toward giving the car, truck or bus owner the greatest possible tire mileage.

And AIR is just as much a tire "material" or "part" as are cords, rubber, bead cables and valves. For maximum tire service, air must be kept "right." In other words, proper inflation is *vitally* important.

To be sure of maintaining correct tire pressures, even in a road emergency, equip every vehicle in your fleet with a Schrader Gauge. Regularly used, it will pay for itself over and over in extra mileage and safety. Order yours today through your distributor.

For Light-duty Trucks, Buses and Commercial Cars

Schrader Pencil - Type Gauge No. 8100 is compact, sturdy, accurate—and easy to carry . . . convenient clip holds gauge to car pocket or service man's jacket. Chromium plated. Four-sided indicator bar (easily read from any angle). Calibrated 20 to 120 lbs.

For Heavy-duty Trucks and Buses

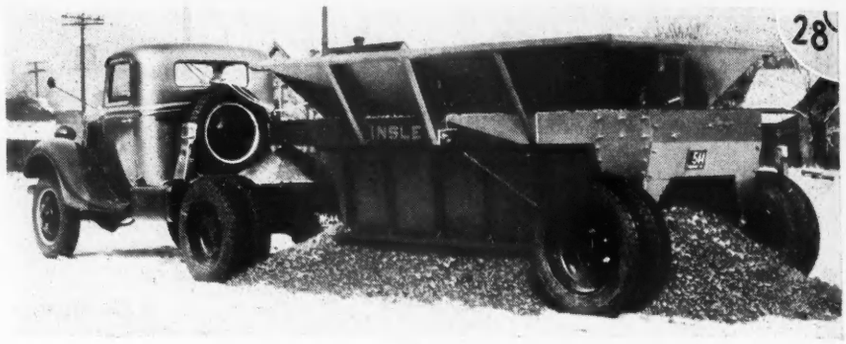
Schrader Gauge No. 7188 has extra-long extension and a dual foot to reach hard-to-get-at-valves (as on inside duals). Calibrated from 10 to 60 lbs. in 1-lb. units, and from 60 to 160 lbs. in 5-lb. units.

A. SCHRADER'S SON, BROOKLYN, N. Y.

Division of
SCOVILL MANUFACTURING COMPANY
INCORPORATED

Schrader
REG. U.S. PAT. OFF.

TIRE-SAVING VALVES, CAPS and GAUGES



28—Insley semi-trailer dump Model 74 will haul 25,000 lb. Drop bottom doors are controlled from the cab by a clutch release and power wind-up

Trailers Tell a Tale of Economy

(CONTINUED FROM PAGE 19)

us better tire mileage, better traction, because the weight is constant on the driving wheels, and better economy generally because the maintenance is lower. We found in our experience with both types of units that we could use a lighter capacity tractor in connection with our semi-trailers for the same payload than we could use when considering a long wheelbase truck chassis with a third axle. From a standpoint of safety, we definitely believe that tractors and semi-trailers are more safe than six-wheel trucks."

AFTER a 5-year test an operator writes:

"Our records indicate a lower tire mile cost and a lower maintenance cost in our operation in addition to permitting the advantage of flexibility of operation and larger bodies as the limits on the dimensions of six-wheel units in our territory would have seriously handicapped our operation. Another factor of great importance is the better safety record that we were able to establish with our semi-trailer equipment."

A pioneer with 18 years' trailer experience says:

"We purchased 10 of the last 12 trailers for a contract that we have been operating for two years and this particular incident showed us definitely that semi-trailers offer many advantages that cannot be covered by six-wheel trucks. This contract required definite spot delivery of empty cans on a very accurate schedule a distance of 86 miles from the source of supply. Semi-trailers permitted us to haul overnight sufficient loads for this daily schedule, keeping a tractor at the customer's plant to spot the semi-trailers as the cans were required. It also permitted a 33-ft. length body that would have been awkward on a six-wheel truck."

Another operator outlines his reasons:

"We have been in the trucking business for 35 years and have seen a great many changes take place in the motor hauling industry and we feel that a tractor-semi-trailer combination is the most efficient piece of equipment that has been presented to the industry. We are pleased to give our reasons for the above statement:

"1. No delay in deliveries because of ability to exchange tractors.

"2. Ability to get into narrow streets

The low-priced Studebaker "cab-forward" model is taken advantage of by Esslinger's for trucking beer. This is the Metro Ace 1½ to 2-ton unit with 101-in. wheelbase. Stake body is 9 ft. long. Short turning radius makes going in traffic easy.

The Sattler Recorder

A perfect record of each truck's stops!

Enables you to check up on each truck after every day's run. Tells if rerouting is necessary, etc. Inexpensive. Entirely self-contained. No connections of any kind.

HANS SATTLER
Sheboygan, Wisconsin

Sterling DIESEL MOTOR TRUCKS

PROVEN BY MILLIONS OF MILES OF LOWEST-COST PERFORMANCE

STERLING MOTOR TRUCK CO., Inc.
MILWAUKEE, WISCONSIN

ALCO

FOUR WHEEL DRIVE

Converts your Ford or Chevrolet truck into a RUGGED, POWERFUL FOUR WHEEL DRIVE able to do the job with ease where much heavier trucks fail, and at a fraction of the cost.
Write
ALMA MANUFACTURING CO.
ALMA, MICHIGAN

and corners when making deliveries and pick-ups.

"3. More tire mileage.

"4. In local work the ability to use one tractor with three trailers on shuttle work.

"5. The ability to use a tractor unit with a semi-trailer unit of one kind in winter and a different semi-trailer in summer in a different kind of work.

"We feel that tractor and semi-trailers are so flexible that they are far superior to six-wheel truck units and recommend them very highly."

With all of the improvements in modern trailers one might normally be led to suspect that the price of trailers has advanced in proportion. The truth is that a modern trailer is several hundred dollars lower in price than a trailer of similar capacity of several years ago and where the operator used to buy a trailer over the counter he now gets free engineering service from highway transportation engineers to make a contemplated purchase "just what the doctor ordered."

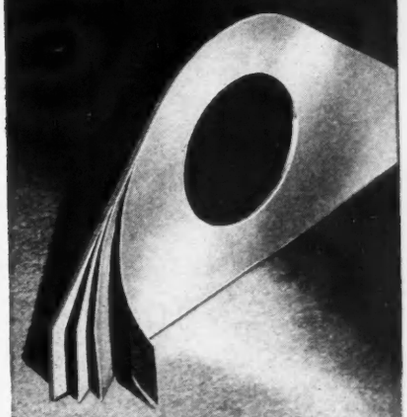
Hydraulic Brake Tester

THE new Bear brake tester is hydraulically operated, using the Lockheed system, and readings of all four wheels are separately indicated on four large gages mounted at the side. Roller bearing steel plates move horizontally causing the wheels to rotate against the frictional resistance of the applied brakes. This test which is said to duplicate road conditions, may be made on the brakes singly, in pairs, or on all four at the same time. The Bear equipment will handle trucks and buses with either standard or wide tread, and with either single or dual rears.

Cartage Haulers Unite

Cartage haulers recently formed a new national association, the National Local Truckers Associations, Inc., to take the place of the old National Team and Truck Owners' Association. The group will establish headquarters in Washington.

P-e-e-l yourself more profit in bearing adjustment!



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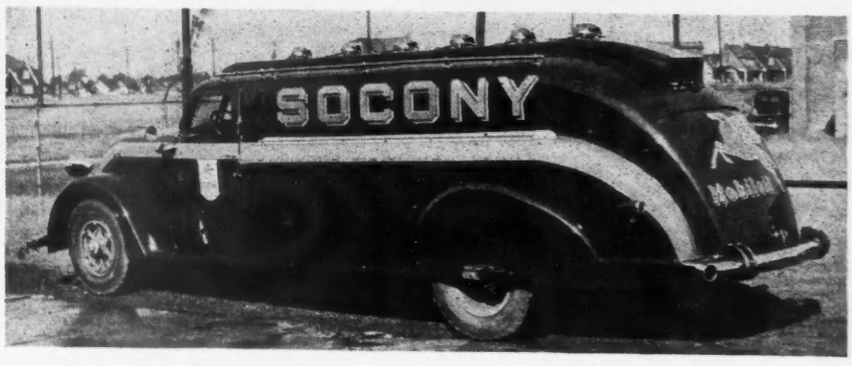

Gar Wood built this 1250-gal., five-compartment, double-bulkhead streamlined tank for Socony, using high tensile steel.

Complete fuel oil job with hose reel is mounted in rear bucket box door with top hinged brackets. Cabinets are underslung.

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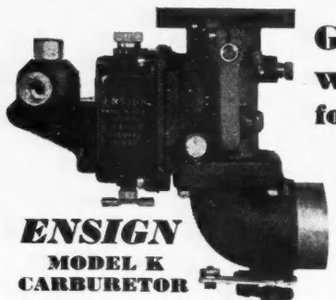

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